
LANSING SCHOOL DISTRICT BOND 2003

PATTENGILL DEMOLITION – MECHANICAL MODIFICATION



OWNER
LANSING SCHOOL DISTRICT
519 W. Kalamazoo Drive
Lansing, MI 48933

ARCHITECT/ENGINEER
GMB ARCHITECTS & ENGINEERS
85 East Eighth Street, Ste. 200
Holland, MI 49423-3528
Phone (616) 796-0200
Fax (616) 796-0201

CONSTRUCTION MANAGER
**SCHOOLS FIRST – JOINT VENTURE OF
GRANGER CONSTRUCTION CO. &
CLARK CONSTRUCTION CO.**
6267 Aurelius Road
P.O. Box 22187
Lansing, MI 48911

**SECTION 00001
PROJECT MANUAL
INFORMATION AND IDENTITIES**

This Project Manual contains the Bidding and Contract Requirements for the Eastern & Everett High School Partial Re-roofing project in Lansing, Michigan. Review of this Manual is important in fulfilling the Contract Requirements. Any questions regarding this Manual or any of the Bidding or Contract Requirements should be directed to Schools First.

PROJECT: Eastern H.S. & Pattengill M.S.
PATTENGILL DEMOLITION-MECHANICAL MODIFICATION

OWNER: Lansing School District
519 W. Kalamazoo St.
Lansing, MI 48933

CONSTRUCTION MANAGER: Schools First
6267 Aurelius Road
P.O. Box 22187
Lansing, MI 48911
(517) 393-1670
(517) 393-1382 fax

ARCHITECT/ENGINEER: GMB
85 East Eighth Street, Suite 200
Holland, MI 49423
(616) 796-0200
(616) 796-0201 fax

**SECTION 00105
NOTICE TO BIDDERS**

1. Schools First requests bids on behalf of Lansing School District for the Separation of Mechanical & Plumbing Systems serving Eastern H.S. and Pattengill M.S. for the scheduled demolition of Pattengill M.S. during the summer of 2009.
2. Bid proposals will be received via delivery or mail by **2:00pm local time on August 18, 2008** by Lansing School District at:

519 W. Kalamazoo St. – Room 200
Lansing, MI 48933
Attn: Purchasing

Proposals must be sealed with bidder's name on the outside of the envelope and designated as follows:

Sealed Proposal (S.O. #1456)

PATTENGILL DEMOLITION-MECHANICAL MODIFICATION

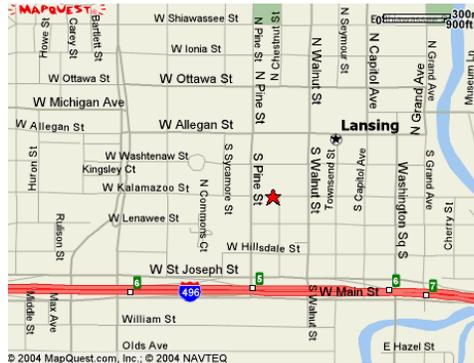
Contractor Name, Address, Phone Number

2. Bidders will be required to submit with their bids a Bid Security by a qualified surety authorized to do business in the State of Michigan, an OSHA Form 200 (or 200-S) for the most recent past year, provide their worker's compensation Experience Modification Rate (EMR) factor and any other information required in the Instructions to Bidders. Bid Security in the form of a certified check is acceptable only for proposals less than \$50,000.00. Bidders shall agree not to withdraw bid proposals for a period of ninety (90) calendar days after date for receipt of bids.
3. Bid proposals will be publicly opened and evaluated by the Project Team with recommended awards subsequently made by Lansing School District.
4. Accepted bidders will be required to furnish satisfactory Performance Bond and Payment Bond and Certificates of Insurance in the amount of 100% of the contract price, as required in the Project Manual. This project is subject to state sales tax and/or use tax.
5. Schools First has been contracted by the Owner to organize and direct the complete construction of the project as a construction manager, and, as such, will act as a representative of the Owner in those matters so designated. Schools First is not a general contractor on this project.
6. Bid documents will be available for examination and distribution on or after August 5, 2008. Examination may be made at:

Granger Construction Company
6267 Aurelius Road
Lansing, MI 48909
Attn: Dave Finnie

7. There will be a pre-bid conference on **August 11, 2008, 10:00 a.m.** at Eastern High School, 220 N. Pennsylvania Ave. [Meet between the 2 buildings at the boiler room (smoke stack)]. This pre-bid conference is **Highly Recommended for all interested bidders**. Pre-bid conference minutes will be distributed to all attendees. Information disclosed in the pre-bid conference minutes will be considered part of the bidding and contract documents.
8. Lansing School District has a strong desire to increase MBE, WBE, and Local business involvement in the Bond Issue.

9. There will be no charge for contract bid documents. It is requested that all bid documents be returned after the bid to the CM.
10. The successful bidder will be required to enter into a contract with Lansing School District on the Agreement Form identified in Section 00500 of the Project Manual.
11. The right to reject any or all bid proposals, either in whole or in part, to accept other than a low bid, or to waive any informalities or irregularities therein is reserved by the Owner.
12. Bids shall be accompanied by a sworn and notarized statement disclosing any familial relationship that exists between the owner or any employee of the bidder and any member of the board, intermediate school board, or board of directors or the superintendent of the school district, intermediate superintendent of the intermediate school district, or chief executive officer of the public school academy. A board, intermediate school board, or board of directors shall not accept a bid that does not include this sworn and notarized disclosure statement.
13. The attached map shows the location of the bid opening (519 W. Kalamazoo St., Lansing, MI 48933). Please note that parking is limited in this area. It is the bidder's responsibility to allow adequate time for such instances so that bids are not received later than 2:00 pm on the stated date. No bids will be accepted after 2:00 pm on the stated date.



END OF SECTION 00105

**SECTION 00200
INSTRUCTIONS TO BIDDERS****1. DEFINITIONS**

- A. **CONTRACT DOCUMENTS** consist of the Agreement, the Conditions of the Contract (General, Supplementary Conditions), all Contracting Requirements, Division 1- General Requirements, Drawings, Specifications, other documents listed in the Agreement, all Addenda issued prior to and all modifications issued after execution of the agreement.
- B. **BID PROPOSAL** is a complete and properly signed proposal to do the Work of an individual Bid Category(ies) for the sums stipulated therein, submitted in accordance with the Bidding Documents.
- C. **BASE BID** is the sum stated in the Bid Proposal for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which work may be added to or deducted from for sums stated in Alternate Bids.
- D. A **BIDDER** is a person or legal entity who submits a Bid Proposal. After award of a contract, the Bidder will be known as Contractor. All Contractors on this project are considered prime Contractors.
- E. **BID CATEGORIES** are units of work performed by a Contractor and his Subcontractors which form part of the total project. The term Bid Category should not be confused with the term Technical Section. Technical Sections of the Specification establish quality and performance criteria, and the Bid Categories designate work scope and assignment.
- F. **BID CATEGORY DESCRIPTION** is a written description of the scope of work to be performed by a Bidder for a Bid Category. A description of the work is provided in the Scope of Work for each Bid Category.
- G. **MBE** is a Minority Business Enterprise in which 51% of the company is owned by a recognized minority.
- H. **WBE** is a Woman Business Enterprise in which 51% of the company is owned by the female gender.
- I. **LOCAL** is defined by Lansing School District as being within the boundaries of the Lansing School District. Typically, this would encompass the following zip codes: 48901 (partial), 48906, 48910, 48911, 48912, 41915, 48933.

- 2. **PROPOSAL FORM:** Use the Bid Proposal Form provided in the bidding documents to prepare and submit bid in triplicate. Do not modify, alter, qualify, or attach stipulations to your Bid Proposal Form. The Owner and the Construction Manager reserve the right to reject such bids as non-responsive.
- 3. **SCHEDULE:** Work on this bid package must be performed according to the Milestone Schedule which is described in Section 01310 Project Scheduling, herein.
- 4. **SITE INSPECTION:** Procedure and schedule will be reviewed with all Bidders at the Pre-Bid Meeting. Inspection of the work areas is required, but must not interfere with the Owner's ongoing activities.
- 5. **BID DOCUMENTS:** The Owner, Construction Manager or Architect, in making copies of the Bidding Documents available on the above terms do so only for the purpose of obtaining Bids on

construction of the Work, and does not confer a license or grant for any other use nor warrant their completeness and adequacy.

6. **BIDDERS EXAMINATION OF PREMISES AND INTERPRETATION OF THE CONTRACT DOCUMENTS:** Each Bidder shall visit the site(s) to become familiar with local conditions affecting the job. Each Bidder shall take their own measurements and be responsible for the correctness of those measurements. Each Bidder shall be held to have made such examinations and no allowances will be made in their behalf by reason of error or omission on their part. If any portion of the Bidder's work depends, for proper results, upon existing conditions, the Bidder shall notify the Construction Manager of any conditions or defects that will affect the results. Failure to so notify will constitute the Bidder's acceptance of the conditions.

Each Bidder shall examine the bidding documents carefully. In the event that the documents require interpretation or correction of any inconsistency, ambiguity, or error, the Bidder will notify the Construction Manager in writing at least seven (7) days prior to the bid due date for clarification by written addenda. If such interpretation is not requested, the bid will be presumed to be based on the interpretation and instructions given by the Architect, and / or Construction Manager after the Contractor Agreement is executed, and in accordance with the terms of that Agreement. Only a written interpretation or correction prior to the bid due date will be binding. Neither the Owner, Architect, nor the Construction Manager will be responsible for any verbal explanations or interpretations of the Contract Documents.

Plans, diagrams and other descriptive information that depict existing conditions are provided for scope identification and scheduling purposes only - dimensions should not be scaled. Quantities, elevations, measurements and locations shown may have been approximated and/or gathered from dated, incomplete original construction documents. Therefore, this data should not be used for bidding purposes without field verification by the bidder.

The Contract Documents are intended to provide sufficient information and intent for the Bidder to assume responsibility for all Work and Materials necessary for proper completion of the Work. The Bidder's own site inspection or contract document review of the work areas shall be relied upon to provide the bidder all other information he may require to properly execute and complete the Work. If inspection presents any unanswered questions, they must be submitted in writing to the Construction Manager as described above. The bidder, by making their bid, represent that they have read and acknowledged that the project schedule, along with the related requirements of Section 01310 – Project Scheduling, are acceptable.

Each bidder, by submitting a bid, represents that the bidder has read and understands the bidding documents, has satisfied himself as to the extent of the proposed work by personal examination of the site and surroundings, is familiar with the local conditions and weather extremes under which the work is to be performed and has made his own estimate there from of the equipment, labor, facilities and difficulties attending the performance and completion of the work.

Failure to request any required written clarification by addenda and submission of a Bid Proposal shall constitute acceptance of all contract document terms and conditions.

7. **ALLOWANCES:**
 - A. Purchase product/material under allowance only as specified, or as directed by the Construction Manager. The amount of allowance includes: net cost of product, delivery to the site and applicable taxes. In addition to the amount of the allowance, include in Base Bid, for inclusion in Contract Sum, Contractor's costs for handling at site including unloading, uncrating and storage; protection from elements, from damage; labor, installation and finishing; other expenses (e.g., testing, adjusting and balancing) required to complete installation; overhead and profit. See work scope definitions for scheduled allowances.

- B. After selection of material by Architect/Engineer and Owner, the contract prices will be adjusted by Change Order to reflect charges, plus or minus, from the allowance.
- C. Selection of product/material: the Architect/Engineer will consult with Contractor in consideration of product/material and suppliers, make selection, designate product or material to be used and notify the Contractor in writing to designate product size, color and texture, supplier, and cost. The Contractor shall assist and make appropriate recommendations to the Architect/Engineer in determining qualified suppliers. The Contractor will also obtain proposals from suppliers when requested by the Architect/Engineer. The Contractor will notify the Architect/Engineer, in writing, of the anticipated effect the selection will have on contract sum and duration. The Contractor is responsible for arranging delivery, unloading, prompt inspection of product for damage and defects, and submitting claims for transportation damage.
- D. Unused funds included under allowances shall be credited to the Owner by deduct Change Order prior to approval of Final Application for Payment.

8. COMBINED BIDS: No Used

9. MANDATORY ALTERNATES: Contractor agrees that prices quoted for Mandatory Alternates (to be quoted on Bid Form) shall be acceptable as full compensation for work thus described in the drawings, specifications, and Instructions to Bidders. Contractor understands the Owner reserves the right to elect to utilize these prices at the discretion of the Construction Manager and the Owner. It is understood that this Contractor's performance and timeliness in the Work described as Lump Sum Base Bid will be considered in the decision to authorize this Contractor to proceed with any Alternates. It is also agreed that the Owner may elect to add or delete any or all Alternates to or from a Contractor's Work at any time during the project, as is practical, for the stipulated sums quoted. The Owner and the Construction Manager reserve the right to award this Contract on the basis of any combination of Mandatory and Voluntary Alternates, if in their best interest to do so. Mandatory Alternate descriptions are indicated on the Bid Proposal Form.

There are no mandatory alternates

10. Voluntary Alternates: Submit Voluntary Alternates at the location indicated on the Bid Proposal Form or on Bidder's company letterhead clearly labeled as:

Lansing School District 2003 Bond & Bid Package No. 19
EASTERN & EVERETT HIGH SCHOOL
PARTIAL RE-ROOFING
VOLUNTARY ALTERNATE(S)

Voluntary Alternates must be adequately detailed to allow acceptance or rejection as presented. The Owner may not consider Voluntary Alternates if the requested Lump Sum Base Bid, Unit Prices, and Mandatory Alternates are not offered.

11. UNIT PRICES: The submission of required Unit Prices is mandatory. Bid Proposals submitted without required Unit Prices may be rejected. Unit prices will be fully considered in awarding the contract. Unit prices quoted shall be acceptable to the Contractor as full compensation for extra work required by the Owner and as just credit to the Owner for work deleted from the Contract after reduction by the contractually allowed mark-up for overhead and profit. It is agreed that the decision to utilize or not to utilize Unit Prices for changes in the Work will be made at the discretion of the Construction Manager or the Owner. Unit price is to be included in Section 00400 – Bid Proposal Form.

12. SUBSTITUTIONS: To obtain approval to use unspecified products in the base bid, bidders shall submit written requests at least ten (10) days before the bid date and hour. Each such request shall include a complete description of the proposed substitute and the name and specification section of the material or equipment for which it is to be substituted. Requests shall clearly

describe the product for which approval is asked, including all data necessary to demonstrate acceptability. If the product is acceptable, the Architect will approve it in an Addendum issued to all plan holders of record. Refer to Section 01600 Product Requirements & Substitution for further information and the required Product Substitution form.

13. BID SECURITY

- A. A bid security will be required for all proposals.
- B. All proposals over \$50,000 shall be accompanied by a satisfactory bid bond executed by the bidder and an approved security company in an amount of not less than five percent (5%) of the final base bid sum. For bids less than \$50,000 a certified check in the amount of 5% of the bid will be allowed as bid security.
- C. The amount of the bid bond shall be forfeited to the Owner upon failure of the successful bidder to enter into a contract within fifteen (15) days after receipt of the contract to be signed. The bid security shall be forfeited to The Owner as liquidated damages, not as a penalty.
- D. The providing of security hereunder shall not preclude the Owner from recovering from the bidder the full difference between the amount bid and the amount for which the Owner ultimately contracts to have the work done, nor shall it entitle the Owner to recover an amount greater than such difference.
- E. Bid security signed by attorney-in-fact must be accompanied by a certified and effectively dated copy of their power of attorney.
- F. The bid security shall be made out to Lansing School District.
- G. Bid bonds shall be duly executed by the bidder, as principal and by a surety that is licensed in the state in which the work is to be performed. All sureties providing bonds on this project must be listed in the latest version of the Michigan Department of Treasury's Circular 570, entitled "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies", with the bond amount less than or equal to the underwriting limitation, and/or have an A.M. best rating of B+ or better. The surety must be authorized to do business in the state of Michigan. Only first party bonds will be accepted.
- H. The Owner will have the right to retain the bid security(ies) of Bidders to whom an award is being considered until either (a) the Contract has been executed and bonds, if required, have been furnished, or (b) the specified time has elapsed so that Bids may be withdrawn, or (c) all Bids have been rejected.
- I. Bid securities will be returned to successful bidders after a contract agreement has been executed, and acceptance of required bonds is made. The bid security of bidders not under consideration for award of contract will be returned by the Construction.

14. PERFORMANCE BONDS AND PAYMENT BONDS

- A. Lansing School District and Schools First require the contractor to furnish a Performance Bond and a Payment Bond, with the amounts equal to the contract price, by a qualified surety naming **both Lansing School District and Schools First as Obligees**. All sureties providing bonds on this project must be listed in the Department of Treasury's Circular 570, entitled "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" with the bond amount less than or equal to the underwriting limitation, and/or have an A.M. Best (latest edition) rating of B+ or better and a financial category not less than Class IV or better. Bonds shall be duly executed by the Contractor, as principal, and by a surety that is licensed in the state of Michigan. Only first party bonds will be accepted. Bonds from Western Surety Company are not acceptable on this project.
- B. Performance Bonds and Payment Bonds are required on all contracts at a value of \$50,000.00 or higher.
- C. The contractor shall deliver the required bonds to Schools First prior to execution of the contract. If the work is to be commenced prior thereto in response to a letter of intent, the bidder shall submit evidence to the Owner that such bonds will be furnished prior to commencement of the Work.
- D. Performance Bond and Payment Bond form AIA Document A312 (1984 Edition) must be used for this project.

- E. The proposed bonding company of the bidder must be acceptable to Lansing School District and Schools First. If, at any time, after acceptance of the contractor's bond, the surety fails to meet the criteria stated in Paragraph 13.A. above, the contractor must, as a precondition to continuing work and receiving further payments, replace the bond with a bond from a surety that meets the stated criteria.
 - F. The Performance and Payment Bond penal sums (i.e., the contract amount) must be listed as a separate line item in the schedule of values described in Section 01019 Payment Procedures in the Project Manual.
15. HAZARD COMMUNICATION STATEMENT: Under no circumstances are Bidders to disturb Asbestos Containing Materials (ACM), Polychlorinated biphenyl (PCB), lead, or any other hazardous materials as defined by OSHA or the Solid Waste Disposal Act (42 U.S.C. section 6903) without appropriate engineering controls. Should the Contractor encounter any hazardous material or suspected hazardous material, the Contractor shall immediately stop work in the area affected and report the condition to the Construction Manager. The Owner's Hazard Communication Program and MSDS sheets appropriate to the facility are also available from the Construction Manager or the Owner at the site.
16. TAXES: This project is subject to State Sales Tax and/or use tax. All materials and supplies incorporated and used in the construction of the work and becoming a permanent part of this project are subject to state sales tax and/or use tax. Include any of these taxes in the bid.
17. EXTRA WORK FEES: For any additional work performed upon authorization of Owner, Bidder agrees to accept the following fees:
- A. There will be a fee of (A, B or C per schedule below) applied to total cost of labor if completely quoted within fourteen (14) days of authorization. Extra work fee shall be reduced as shown on the schedule below if not completely quoted within fourteen (14) days. Reimbursable labor must be expended at the Project Site and must include hourly wage rate plus all insurance, taxes, health and welfare contributions and other employee benefits. No other miscellaneous fees, allowances, off site labor, or Overhead costs are allowed; overhead includes all costs not directly expended at the Project Site.
 - B. There will be a fee of (A, B or C per schedule below) applied to total cost of material. Total cost of material includes applicable sales tax.
 - C. There will be a fee of (D, E or F per schedule below) applied to the quote of a Contractor's work performed for a Bidder. These fees shall be acceptable as full compensation for extra work including all Bidder overhead and profit.
 - D. Additional bond premiums will be allowed at net invoice charge. A cost breakdown of all wages, material and vendor invoices must be submitted with all extra work to contracts.
 - E. Markups are based on amounts determined after all applicable discounts are applied. Costs exclude warehousing, small tools or estimating charges that are part of overhead.
 - F. Extra Work Fee Schedule
 - A = 15% for extra work completely and correctly quoted within 14 days of issuance and self-performed.
 - B = 10% for extra work completely and correctly quoted within 14-21 days of issuance and self-performed.
 - C = 5% for extra work completely and correctly quoted within 22-28 days of issuance and self-performed.
 - D = 7 ½% for extra work completely and correctly quoted within 14 days of issuance and performed by subcontractors of the Contractor.
 - E = 5% for extra work completely and correctly quoted within 14 - 21 days of issuance and performed by subcontractors of the Contractor.
 - F = 2 ½% for extra work completely and correctly quoted within 22 - 28 days of issuance and performed by subcontractors of the Contractor.

- G. For work not quoted within 28 days, the Contractor shall be paid the cost estimate as determined solely by the Construction Manager plus mark ups C & F. This Extra Work Fee Schedule is a Mandatory contract obligation upon all bidders.
18. CREDIT FOR WORK DELETED: Should any work be deleted from Contract by order of Owner, full cost savings realized thereby will be credited to Owner.
19. BIDDING PROCEDURES
- A. A bid is invalid if it has not been deposited at the designated location prior to the time and date for receipt of bids indicated in the advertisement or Notice to Bidders or prior to any extension thereof issued by addendum to the bidders. Bids received after the time and date for receipt of bids will be returned unopened.
- B. Prior to the receipt of bids, addenda will be mailed or delivered to each person or firm recorded by the Construction Manager as having received the bidding documents and will be available for inspection wherever the bidding documents are kept available for that purpose. No addendum will be issued later than three (3) days prior to the date for receipt of bids except an addendum, if necessary, postponing the date for receipt of bids or withdrawing the request for bids. Each bidder shall ascertain, prior to submitting a bid, that he/she has received all addenda issued and shall acknowledge receipt in the bid.
- C. All bids must be signed as follows:
1. Corporations: Signature of official shall be accompanied by a certified copy of the resolution of the board of directors authorizing the individual signing to bind the corporation.
 2. Partnerships: A certified copy of the power of attorney authorizing the individual signing to bind all partners shall accompany the signature of one partner. If a certified copy of the partnership's certificate submitted with the bid indicates that all partners have signed, no authorization is required.
 3. Bids submitted by joint ventures shall be signed by one of the joint ventures and shall be accompanied by a certified copy of the power of attorney authorizing the individual signing to bind all the joint ventures. If a certified copy of the joint venture's' certificate submitted with the bid indicates that all joint ventures have signed, no authorization is required.
 4. Individual signing in own behalf: No authorization is required.
 5. Individual signing on behalf of another: Power of attorney or comparable evidence of authority shall accompany bid.
- D. Bids shall be submitted in an opaque, sealed envelope. Identify the envelope with:
1. Project name.
 2. Name and address of bidder.
 3. Notation "BID ENCLOSED."
 4. Bid Package, Work Category name and number.
- E. No responsibility shall attach to the Construction Manager, the Owner, or the authorized representatives of either one, for the premature opening of any proposal that is not properly addressed, delivered and identified.
- F. The bidder shall assume full responsibility for timely delivery of bid to the location designated.
- G. Negligence in preparation, improper preparation, errors in and/or omissions from the bid shall not relieve the bidder from fulfillment of any and all applicable obligations and requirements of the Contract documents.
- H. If a Bidder is a MBE or WBE firm, they must identify themselves as such on the Bid Proposal Form, otherwise they will not be categorized as such. In the event that a question is raised regarding the ownership of a company, Lansing School District will use an independent third party for certification.

20. CONSIDERATION OF BIDS

- A. The bidder acknowledges the right of the Owner to reject any or all bids and to waive any informality or irregularity in any bid received. In addition, the bidder recognizes the right of the Owner to reject a bid:
1. If the bidder fails to furnish any required bid security, or fails to submit the data required by the bidding documents; or
 2. If the bid is in any way incomplete or irregular; or
 3. If the bidder's performance as a contractor was unsatisfactory under a prior contract for the construction, repair, modification, or demolition of a facility with the Owner or the Construction Manager; or
 4. For known poor performance by the bidder; or
 5. Inadequate financial condition; or
 6. If Bidder adds any provisions reserving right to accept or reject any award, or enter into Contract pursuant to an award; or
 7. If Unit or Lump Sum prices or Alternates contained in the Bid Proposal are obviously unbalanced either in excess of, or below, reasonable cost analysis values; or
 8. If Bidder fails to complete Bid form in any other particulars where information is requested so Bid form may be properly evaluated.
- B. It is the intent of the Owner to award a Contract to the lowest, responsible bidder provided the bid has been submitted in accordance with the requirements of the bidding documents and does not exceed the funds available. However, entry into a joint venture with an MBE, WBE, or Local business; or the use of MBE, WBE, or Local business in significant-sized subcontracts will be taken into serious consideration.
- C. Bidders may be requested to submit to the Construction Manager a properly executed Contractor's Qualification Statement or other informational format specified by the Construction Manager after bid opening. Bidders shall be prepared to submit their most recent audited financial statement prior to the Construction Manager making an award of contract. Simple balance sheets will not be acceptable. The Owner and Construction Manager may, at their sole discretion, accept or reject bidders as qualified. The right to waive any informalities or irregularities in qualification materials is reserved by The Owner and Construction Manager. Bidder in submitting their bid agrees to accept the decision of The Owner or Construction Manager as final.

21. MODIFICATION OR WITHDRAWAL OF BID

- A. A Bid may not be modified, withdrawn or canceled by the Bidder after the stipulated time period, (90) ninety days, and date designated for the receipt of Bids, and each Bidder so agrees in submitting their Bid.
- B. Prior to the time and date designated for receipt of Bids, any Bid submitted may be modified or withdrawn by notice to the party receiving Bids at the place designated for receipt of Bids. Such notice shall be in writing over the signature of the Bidder, or by telegram. If by telegram, written confirmation over the signature of Bidder shall be mailed and postmarked on or before the date and time set for receipt of Bids, such written notice shall be so worded as not to reveal the amount of the original Bid.
- C. Withdrawn Bids may be resubmitted up to the time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.
- D. Bid security under B. or C., above shall be in an amount for the Bid as modified or resubmitted.

22. POST BID INFORMATION

- A. After the Bids are received, tabulated, and evaluated by the project Team, the apparent low bidders shall meet with the Construction Manager, Lansing School District, and potentially other members of the project Team at a post-bid meeting for the purposes of determining

completeness of scope and any contract overlaps or omissions. If requested, the Bidder shall submit additional qualification information as required in the Instructions to Bidders. The bidder will provide the following information at the post-bid meeting:

1. Bidder Qualification Form.
 2. Designation of the work to be performed by the Bidder with his own forces including manpower for the contractor and that of their subcontractors.
 3. Detailed cost breakdown of the contractor's bid including labor, equipment and material unit prices.
 4. A list of the Bidder's employees indicating total number of employees, number of employees who are minorities, number of employees who are female, and number of employees who reside within Lansing School District.
 5. A list of names of the subcontractors or other entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the work with their appropriate MBE, WBE, or Local designation and the approximate value of their contracts.
 6. The proprietary names and suppliers or principal items or systems of materials and equipment proposed for the work.
 7. The names and backgrounds of the Contractor's key staff members including superintendent and assistants and establish the reliability and responsibility of the persons or entities proposed to furnish and perform the work described in the Bidding Documents.
 8. Commitment to construction schedules, identification of items requiring long lead deliveries and manpower information in accordance with Section 01310.
 9. Safety program compliance, company safety programs, signed safety agreement, etc. as described in the Project Manual.
 10. Any additional information/documentation that will indicate the amount of effort exerted by the Bidder to utilize MBE, WBE, and Local firms in their Bid Proposal.
- B. Prior to award of a contract, the Construction Manager will notify the Bidder if either The Owner, the Architect, or the Construction Manager, after due investigation, has reasonable objection to any such proposed person or entity. If The Owner, Architect or Construction Manager has reasonable objection to any such proposed person or entity, the Bidder may submit an acceptable substitute person or entity with an adjustment in his bid price to cover the difference in cost occasioned by such substitution. The Owner may, at his discretion, accept the adjusted bid price or he may disqualify the Bidder. In the event of either withdrawal or disqualification under this Subparagraph, bid security will not be forfeited, notwithstanding the provision of Part 16. Bid Security in the Instructions to Bidders.
- C. The Bidder will be required to establish to the satisfaction of the Construction Manager, The Owner and Architect, the reliability and responsibility of the persons or entities proposed to furnish and perform the work described in the Bidding Documents.

23. AWARD OF TRADE CONTRACTS

- A. Bid Proposals will be between the Owner and the successful bidder (Refer to Specification Section 00500 Agreement Form for a sample copy of the Trade Contract Agreement).
- B. No single subcontract may exceed 50% of the Lump Sum Base Bid for any Bid Category without the prior written consent of the Construction Manager. See Owner / Contractor Agreement for additional restrictions on assignment of work.
- C. As requested by the Board of Education, the following information will be presented to the School Board when considering bid proposals: designation if the Bidder is a Minority, Woman, or Local-owned business; composition of contractor's own workforce (minority, woman, local); the approximate value (and thus percentage of overall contract) of work to be performed by subcontractors and whether those subcontractors are MBE, WBE, or Local businesses.

24. MINORITY, WOMAN, AND HANDICAPPER CONTRACTORS AND SUPPLIERS

The Lansing School District (LSD) Board of Education recognizes a diverse community exists in Lansing, and it is therefore of particular interest to LSD to promote supplier diversity and to engage firms who support the constituency of LSD. LSD therefore solicits bid proposals and participation of qualified minority, female and other disadvantaged firms, and those qualified local area firms who maintain offices within the Lansing School District for the services of this bid proposal. To ensure that efforts are made at every level of the District's procurement efforts, potential awardees who are invited to a post-bid/pre-award conference with Schools First must be prepared, within 24 hours of the bid date and time, to disclose their own lower tier subcontractor bid solicitation and lower tier subcontractor bid information to Schools First and the Lansing School District at the contract post-bid/pre-award meeting. This information is being requested to determine MBE, WBE, and LOCAL BUSINESS participation at any tier. Schools First and Lansing School District strongly encourage MBE, WBE, and LOCAL BUSINESS participation for the LSD's 2003 Bond Projects and encourage prime bidders to encourage this participation within their own subcontractor and vendor procurement as well. See section 21.A.3 for required information at post-bid meetings.

See the attached Verification of Minority Business Enterprises (MBE) and/or Women Business Enterprises (WBE) and/or Local Contractor Participation form. (Local Contractors are those defined, per Lansing School District as being located within the boundaries of Lansing School District.) This form will be required with the Request for Final Payment.

25. **PREVAILING WAGES:** State of Michigan Department of Consumer & Industry Services prevailing wage rates are a requirement of this project. The Construction Manager reserves the right to demand evidence of compliance prior to releasing payments for work in place at no additional cost. Prevailing wage rates for Ingham County will be issued in Addendum No.1.

END OF SECTION 00200

**SECTION 00220
WORK DESCRIPTIONS****PART 1 - GENERAL**

1.1 Section includes:

- A. Work Descriptions

1.2 RELATED DOCUMENTS

- A. Drawings and Division 0 General and Supplementary Conditions and other Division 1 Specification Sections apply to Work of this Section.
- B. In Divisions 1 through 16, a reference to the project General Conditions includes by inference all amendments or supplements in the project Supplementary Conditions.

1.4 BID CATEGORY/WORK DESCRIPTIONS

- A. The following special provisions form a part of each Bid Category Work Scope and apply to each Contractor's Scope of Work found after this Section.
- B. The Bid Category/Work Scopes should in no way be construed as being all-inclusive. It is issued as a guide to aid in the assignment of work. If conflict regarding assignment of work exists between the drawing notes and these descriptions, the Description of the Work and Bid Category/Work Scopes will take precedence. The bid category numbers and the specification section numbers are not, in all cases, identical.
- C. All Contractors are to coordinate all work with the work of other trades through the Construction Manager for proper function and sequence (see Section 01310). Furnish approved copies of shop drawings, mock-ups, and technical data to other contractors designated by the Construction Manager for the purposes of coordination of this work. Provide to all other trades all information (drawings, diagrams, templates, embedments) in other related work necessary for the coordination of the work. Each phase of the work shall be coordinated with the Construction Manager prior to proceeding. Contractor shall keep informed as to work of all trades engaged in the Project, and shall execute work in such a manner as not to delay or interfere with the progress of other trades involved. Schedule work so that no other party is delayed in execution of the work. Employ competent supervision on the job throughout the entire period of construction to ensure coordination.
- D. Hoisting of material or equipment above occupied areas will not be permitted unless the existing structure can bear the load of the material or equipment being hoisted if accidentally released. It is the responsibility of the Contractor performing such hoisting to reinforce existing structures or conduct hoisting when areas below construction operations are vacant.
- E. It is to be noted that, in a number of instances throughout the Project, space for electrical and mechanical lines is limited. Therefore, it is imperative that all trades coordinate work to ensure concealment in space provided. Priority of space will be decided by the Construction Manager where conflict exists. If work is not properly coordinated, the Contractor shall remove and relocate work without additional compensation.
- F. Bidders of ALL Work Categories shall include all Work, compliance, and costs for compliance with the Appendices, the Bidding Requirements, General Conditions, Supplementary Conditions, General Requirements (Specification Sections 00001 through 01700) and Drawings/Specifications as prepared by GMB Architect's & Engineers including all addenda. Particular emphasis is placed on the following requirements, which are stated below for emphasis and clarity. All Bidders of any category must include:
 - 1. Development of a complete understanding of other work categories and provide continuous coordination with interfacing trade contract work of other categories.
 - 2. All layout, control points and engineering required for work of the category being bid as required to execute the work, and as defined in these specifications.
 - 3. Labor, tools, equipment, incidental hardware and materials required to receive, unload, store, protect and install work of the category as well as materials furnished by other categories but required to be installed as a requirement of the category being bid.

4. Submittal within twenty (20) days, of information as defined by section 01300.
 5. Continuous trash removal and clean up required per section 01700 – Execution Requirements.
 6. Bidders shall be aware of delivery requirements to accommodate the completion schedule of this project and shall include all expediting and overtime costs to allow for completion and turnover as shown in the milestone schedule. It is the Bidder's responsibility to prepare and submit shop drawings and other submittals in a timely manner to accommodate the milestone and progress schedule and prevent delays to the project.
- G. The following items define work responsibilities for which all contractors are responsible in their Bid Categories:
1. Include layout, engineering, and ongoing cleanup as it pertains to each bid category's work description. Coordinate layout with other contractors. Schools First will provide elevation and a principle baseline only. It is each Contractor's responsibility to hire an accredited surveying company to layout all sitework lines and levels per the contract documents.
 2. Include dumpster and disposal fees for all debris required to carry out this scope of work.
 3. Indicate on the Bid Proposal Form the number of hours allocated to complete the scope of work defined by the bid category. Also indicate the number of dumpsters required to remove debris generated by work in the Bid Category.
 4. All submittals and shop drawings are required within ten (10) days of receipt of a Letter of Intent/Notice to Proceed.
 5. Coordinate with other trade, including mandatory participation in weekly progress meetings. Failure to attend meetings may result in financial penalties equivalent to the time spent by others in attendance coordinating work. Specific required coordination meetings with the Mechanical, Geothermal, Electrical, and Fire Protection are addressed in Section 01010 Summary of Work and Use of Premises. An additional coordination meeting between the Steel and Miscellaneous Metals, Mechanical, Geothermal, Electrical, and Fire Protection for work in the Auditorium.
 6. Maintain as-built drawings throughout the project. Submit all closeout documentation and as-built drawings as specified within thirty (30) days of Substantial Completion.
 7. Obtain and pay for all permits and inspections required for work described by the Bid Category.
 8. Furnish, install, maintain, and remove all weather protection and security measures required to carry out this scope of work.
 9. Each Bid Category is responsible for receiving, off-loading, hoisting and the subsequent sage and secure storage of materials and/or equipment related to this work.
 10. Review all drawings, notes, and Bid Categories for areas requiring work described by each Bid Category to confirm responsibilities.
 11. Each contractor is to furnish their foreman with an operable cellular phone so that they can be easily contacted by Schools First's superintendent.
 12. Full-time, on-site supervision is required for work performed in each Bid Category.
 13. Each contractor must give Schools First 48-hour notice prior to any testing requirements. Schools First is responsible for coordinating testing of roofing. Any additional testing requirements for any Bid Category are the responsibility of that Bid Category and to be included in the base bid.

END OF SECTION

VERIFICATION OF MINORITY BUSINESS ENTERPRISES (MBE) AND/OR WOMEN BUSINESS ENTERPRISES (WBE) AND/OR LOCAL CONTRACTOR PARTICIPATION

(To be completed and submitted with request for Final Payment)

_____, being duly sworn, deposes and says he/she makes this affidavit on behalf of _____ into agreement with Lansing School District, for the construction of PATTENGILL DEMOLITION – MECHANICAL MODIFICATIONS on the premises of the Owner located in Ingham County, Michigan, hereby verifies that the MBE and/or WBE and/or Local Contractor participation on the above project was as follows:

Actual Dollars Paid

Percent of Entire Contract

Minority Business Enterprises

Women Business Enterprises

Local Business Enterprises

By _____

Title _____

SUBSCRIBED AND SWORN TO BEFORE ME,
THIS _____ DAY OF _____, A.D. _____

NAME _____

MY COMMISSION EXPIRES _____

NOTARY PUBLIC _____ COUNTY, MICHIGAN

**SECTION 00300a
Prevailing Wages**

SECTION 00400

**BID PROPOSAL FORM
(Submit in Triplicate)**

DATE: _____

BIDDER'S NAME _____

LEGAL ADDRESS _____

_____ ZIP CODE _____

DELIVERY ADDRESS (IF DIFFERENT FROM ABOVE) _____

_____ ZIP CODE _____

TELEPHONE: _____

FAX PHONE: _____

E-MAIL ADDRESS: _____

PROJECT: PATTENGILL DEMOLITION – MECHANICAL MODIFICATION

RECEIPT OF BIDS: **2:00 PM, local time, August 14, 2008**

ADDRESSED TO: LANSING SCHOOL DISTRICT
519 W. Kalamazoo St. – Room 203
Lansing, MI 48933
Attn: Purchasing Dept. (Include S.O. #1456 on Envelope)

The Bidder, in compliance with the Advertisement to Bid for construction for PATTENGILL DEMOLITION – MECHANICAL MODIFICATION having examined the Contract Documents and the Project Manual and Bidding Documents and all other related documents and being familiar with the site of the proposed project including availability of materials and labor and weather conditions, hereby proposes to furnish all labor, materials, tools, equipment, machinery, equipment rental, transportation, superintendence, all services, and to perform all work in the bid category(ies) stated in accordance with the contract documents for the amount stated below. These prices are to cover all expenses incurred in performing work required for this bid category(ies) under the contract documents.

BASE BID: The bidder agrees to perform all work for bid category(ies) as described in the contract documents, for the base bid(s) stated below. The base bid(s) shall include the cost of Performance and Payment Bonds. For each category to be bid include the base bid, written and in figures, the cost of the Performance Bond and Payment Bond which is included in the base bid, in figures, and the bid category and description.

Show amounts in both words and figures. In case of discrepancy, amount shown in words will govern.

The undersigned, having carefully examined and thoroughly perused specifications for the above named project; and become fully familiar with all conditions affecting the work required by those specifications, prepared by GMB Architect's & Engineers hereby proposes to provide all materials, labor, services, etc., required thereby for the base bid sum of:

PATTENGILL DEMOLITION – MECHANICAL MODIFICATION

BID CATEGORY: _____ WORK DESCRIPTION: _____

Base Bid including bond: _____

(Words)

DOLLARS \$ _____
 (Figures)

BOND COST \$ _____
 (Figures)

MANHOURS _____

VOLUNTARY ALTERNATES: Contractor agrees that voluntary alternates for materials, methods, and/or equipment specified, if accepted by Owner, will be added to or deducted from base bid. Attach additional typed sheets on your letterhead if needed. Label clearly as “Bid Package NO. 19 – Eastern & Everett High School Partial Re-roofing Remodel - Voluntary Alternates.”

<u>Item</u>	<u>Amount</u> <u>Add/(Deduct)</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

LABOR RATES: The following labor rates are required to be offered by the respective bidders. The undersigned agrees that the following amounts will be used in determining contract changes from the base bid for authorized changes in the scope of work. All labor rates SHALL NOT include Bidder’s mark-up for overhead and profit. Appropriate back-up of labor rates will be required at the post-bid meeting to confirm accuracy of labor rates. Submitted labor rate will be compared with industry-accepted rates and prevailing wage rates.

JOB TITLE	FOREMAN		JOURNEYMAN	
	TIME	TIME & ½	TIME	TIME & ½
1. Laborer	\$	\$	\$	\$
2. Carpenter	\$	\$	\$	\$
3. Roofer	\$	\$	\$	\$

ADDENDA: Following addenda have been received, are hereby acknowledged, and their execution is included in bid sums listed herein.

Addendum No.	Dated	Addendum No.	Dated
Addendum No.	Dated	Addendum No.	Dated

AGREEMENT: Undersigned agree(s) to execute an agreement for work covered by this proposal on the form included in Section ~~00500-00500~~ of these bid documents, and in accordance with the Supplemental and General Conditions and other Contract Documents, provided he be notified of proposal's acceptance within ninety (90) days after due date of opening. Undersigned further agrees that this proposal shall remain open during such ninety (90) day period. Signature below serves as acknowledgment that Bidder understands Bid Documents and Appendices, and Bidder assumes full responsibility for the cost impact of same. Undersigned also acknowledges that Owner reserves right to accept or reject any and all bids with or without cause, and/or to waive informalities in bidding.

ASBESTOS-FREE PRODUCT INSTALLATION

It is hereby understood and agreed that no products/materials containing asbestos, including chrysotile, amosite, crocidolite, tremolite, anthophyllite, actinolite or any combination of these materials that have been chemically treated and/or altered shall be installed or introduced into the building by the contractor or his employees, agents, subcontractors, or other individuals or entities over whom the contractor has control. The contractor, its subcontractors of any tier, and vendors of any tier shall be required to sign a certification statement ensuring that all products or materials installed or introduced into a building will be asbestos-free.

NON-COLLUSIVE CERTIFICATION

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of knowledge and belief.

- a) The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or any competitor;
- b) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor;
- c) No attempt has been made or will be made by the bidder to insure any other person, partnership, or corporation to submit or not to submit a bid for the purpose of restricting competition;
- d) The person signing this bid or proposal certifies that he has fully informed himself regarding the accuracy of the statements contained in this certification, and under the penalties of perjury, affirms the truth thereof, such penalties being applicable to the bidder as well as to the person signing in its behalf.
- e) That attached hereto (if corporate bidder) is a certified copy of resolution authorizing the execution of this certificate by the signature of this bid or proposal in behalf of the corporation bidder.

**SECTION 00500
AGREEMENT FORM (Contract)**

PART 1 - GENERAL

1.1 AGREEMENT FORM (Contract)

- A. The form that will be used for all contract agreements on the project shall AIA Document A101/Cma – Standard Form of Agreement Between Owner and Contractor, 1992 Edition following this section.
1. The above Agreement Form is available for review upon request from Schools First.
 2. Contractor's attention is directed to Section 00703 General Conditions and Section 00813 Supplementary Conditions.

END OF SECTION 00500

**SECTION 00703
GENERAL CONDITIONS OF THE CONTRACT**

PART 1 - GENERAL

1.1 GENERAL CONDITIONS OF THE CONTRACT

- A. AIA A201/CMA, 1992 Edition as amended via the proceeding Supplementary Conditions is not bound within this Project Manual but is hereby a part of the Contract Documents.
- B. AIA A201/CMA, 1992 Edition is available for inspection at Schools First offices at: 550 Marshall St., Lansing, MI 48912 or may be purchased at the AGC – Lansing Office, 2323 N. Larch, Lansing, MI 48909.
- C. AIA Document A201, 1992 Edition, is further modified by the project Supplementary Conditions, Section 00813.

END OF SECTION 00703

**SECTION 00813
SUPPLEMENTARY CONDITIONS**

The following supplements modify, change, delete from, or add to the "General Conditions of the Contract for Construction", AIA Document A201 1992 Edition. Where an Article of the General Conditions is modified or a Paragraph, Subparagraph, or Clause thereof is modified or deleted by these supplements, the unaltered provisions of that Article, Paragraph, Subparagraph, or Clause shall remain in effect.

ARTICLE 1: GENERAL PROVISIONS**1.1 BASIC DEFINITIONS**

1.1.3 (Add the following to the end of the Subparagraph) "The Contractor acknowledges and agrees that the Contract Documents are sufficient to provide for the completion of the work and include Work, whether or not shown or described, which reasonably may be inferred to be required or useful for the completion of the Work in accordance with applicable laws, codes, and customary standards of the construction industry."

1.1.8 (Add) Miscellaneous Definitions

- .1 The term "product" as used herein includes materials, systems, and equipment.
- .2 The term "supplier" as used herein, includes a firm or organization furnishing or delivering products directly to the jobsite, and because of such direct delivery, could be construed under the lien laws of the State in which the work is being performed as having lien rights against the funds due the Contractor. Suppliers of material and equipment, delivering to Contractor or Subcontractor on an open account basis and not having lien rights on the Work, will not be considered suppliers within the meaning of the Contract Documents.
- .3 A bidder selected to enter into a Contract with the Owner for Work included under the bidder's proposal is termed an "Awardee," until such time as he is awarded a Contract and becomes the Contractor.
- .4 Where "request", "approval", "satisfactory", and similar words appear, it is the request, approval, or satisfaction of the Architect/Engineer that is intended.
- .5 Where "complete" is used, it shall mean "complete with connections, supports, attachments, and incidental items necessary for a finished and properly operating assembly or installation."
- .6 Where "drawing" is used, it shall mean plans and detail drawings, both large and small scale, furnished by the Architect/Engineer for the purpose of showing the Work to be done.
- .7 The term "furnish" - to supply (only) to another party for their use of installation, including cost of delivery and unloading at the job site.
- .8 The term "install" - to distribute, uncrate, assemble, and fix into the intended final positions, the installer to provide all miscellaneous hardware and supplies required to anchor and support securely, clean up, and dispose of rubbish.
- .9 The term "connect" - to bring service(s) to point of installation and make final

connections to the service(s) to the installed equipment, and to provide miscellaneous auxiliary appurtenances necessary to make operable for its intended use.

- .10 The term "provide" - to furnish, install, and connect complete.
- .11 Bonds as covered by Article 1.18 of the Instructions to Bidders shall be considered a part of the Contract Documents.

1.2 EXECUTION, CORRELATION AND INTENT

1.2.6 (Add) "If there should be a conflict between two or more of the Contract Documents, the following order of interpretation shall apply:

- .1 The terms and conditions as set forth in the Bidding Requirements, including legal advertisement thereof, shall have full force and effect until such time as the Owner-Contractor Agreement is executed between the Owner and the Awardee.
- .2 Where there is a conflict between the Bidding Requirements and the Contract Documents, the Contract Documents shall govern.
- .3 Where requirements specifically set forth in the Owner-Contractor Agreement are in conflict with other Contract Documents, the Owner-Contractor Agreement shall govern.
- .4 Where there is conflict between the requirements of the General Conditions of the Contract and the Supplementary Conditions, the requirements of the Supplementary Conditions shall govern, except where the requirements set forth in the Supplementary Conditions are contrary to law, in which case the legal requirements shall govern. The General Conditions of the Contract shall take precedence over other Contract Documents except for the Owner-Contractor Agreement.
- .5 Where there is conflict between the Drawings and Specifications, a conflict within the Drawings or within the Specifications, the conflict, shall be resolved by providing better quality or greater quantity as provided in the Supplementary Conditions, Clause 3.2.1.1."
- .6 When a duplication of material or equipment occurs in the Drawings or the Specifications by assignment of Work to separate prime contracts, each Prime Contractor shall be deemed to have bid on the basis of each furnishing such material or equipment. The Construction Manager will decide which Contractor(s) shall furnish the same and which contract amount shall be adjusted, for not incorporating such material or equipment into the Project."

1.2.7 (Add) "It is the intent of the Contract Documents to accomplish a complete and first-grade installation in which there shall be installed new products of the latest and best design and manufacturer, and workmanship shall be thoroughly first class, executed by competent and experienced workmen.

- .1 Details of preparation, construction, installation, and finishing encompassed by the Contract Documents shall conform to the best practices of the respective trades, and that workmanship, construction methods, shall be of first class quality so as to

accomplish a neat and first class finished job.

- .2 Where specific recognized standards are mentioned in the Specifications, it shall be interpreted that such requirements shall be complied with."

1.3 OWNERSHIP AND USE OF ARCHITECT'S DRAWINGS, SPECIFICATIONS AND OTHER DOCUMENTS

1.3.1 (Replace with the following) "The Drawings, Specifications, and other Documents prepared by the Architect are instruments of the Architect's services through which the Work to be executed by the Contractor is described. The Architect grants the Owner a license to use and permit the use of copies, including reproducible copies of the Drawings, Specifications, and other documents prepared by the Architect in connection with the Owner's construction of the Project, its use, and occupancy. The Drawings, Specifications, and other documents shall not be used on other Projects by the Contractor without the prior written consent of the Architect, and the Contractor shall take such action as may be necessary to prevent their use on other projects. The Contractor, Subcontractors, Sub-subcontractors, and material and equipment suppliers are granted a limited license to use (but not reproduce) applicable portions of the Drawings, Specifications, and other documents appropriate to and for use in execution of their Work under the Contract Documents. Submittals or distributions necessary to meet official regulatory requirements or for other purposes relating to the completion of the Project are not to be construed as publication, in derogation of the Architect's copyright or other reserved rights."

ARTICLE 2: OWNER

2.1 DEFINITION

2.1.2 Delete this Subparagraph in its entirety.

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

2.2.2 (Replace with the following) "The Owner shall not be responsible for furnishing surveys (unless required for the execution of the Work and requested by the Contractor in writing) or other information as to the physical characteristics of, legal limitations of, or utility locations for the Project site, but as necessary for the Work, shall furnish or cause to be furnished to the Contractor a legal description of the project site, which shall not constitute one of the Contract Documents. The Contractor shall not be entitled to additional compensation resulting from its failure to confirm the location of the site utilities or existing structures prior to the opening of its bid."

2.2.3 (Add the following to the first sentence) . . . , "including those charges and costs related to zoning changes, environmental impact statements, and similar requirements related to use of the site."

2.2.4 (Replace with the following) "Upon request of a written request from the Contractor, information or services under the Owner's control shall be furnished by the Owner with reasonable promptness to avoid delay in orderly progress of the Work."

2.3 OWNER'S RIGHT TO STOP THE WORK

2.3.1 Delete the word "persistently". (Add the following text to the end of the Subparagraph)

"This right shall be in addition to, and not in limitation of, the Owner's rights under Paragraph 12.2."

2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

2.4.1 (Replace with the following) "If the Contractor defaults or neglects to carry out the Work in any respect in accordance with the Contract Documents and fails to commence to correct such default or neglect within 48 hours after written notice thereof from the Construction Manager or the Owner, (except such period shall be 7 days if the notice is given after final payment), thereafter fails to use its best efforts to correct such default or neglect to the satisfaction of the Owner and Construction Manager, or except where an extension of time is granted in writing by the Owner, fails to correct such default or neglect within 30 days of such notice to the satisfaction of the Construction Manager and the Owner, then the Owner may, upon written notice of the Contractor and without prejudice to the other remedies the Owner may have, make good such deficiencies; provided that if such default or neglect results in a threat to the safety of persons or property, the Contractor shall immediately commence to correct such default or neglect upon receipt of written or oral notice thereof. If the notice is given before final payment, an appropriate Change Order shall be issued deducting from the payments then or thereafter due the Contractor the costs of correcting such deficiencies, including compensation for the Architect's and Construction Manager's additional services made necessary by such default, neglect, or failure and the Owner's administrative and legal expense, including the time of the Owner's personnel in dealing with such default. If payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner."

ARTICLE 3: CONTRACTOR

3.1 DEFINITION

3.1.1 References to "the Contractor" shall be read as referring to each Contractor.

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

3.2.1.1 (Add) "Where there is a conflict in or between the Drawings and Specifications, the Contractor shall be deemed to have estimated on the more expensive way of doing the Work and the larger quantity required. Only changes or interpretations covered by Addenda or written from the Architect will be permitted during construction of the Work."

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

3.3.1 (Add) . . . "Additional provisions pertaining to coordination are included in Division 1, General Requirements."

3.4 LABOR AND MATERIALS

Delete this Paragraph in its entirety. Refer to Specification Section 01010 - Summary of the Work, for provisions on this subject. References to Paragraph 3.4 elsewhere in the Contract Documents shall read as referring to that Section in the Specifications.

3.5 WARRANTY

3.5.1 (Replace with the following) "In addition to any other warranties, guarantees, or obligations set forth in the Contract Documents or applicable as a matter of law and not in limitation of the terms of the Contract Documents, the Contractor warrants and guarantees that:

- .1 The Owner will have good title to the Work and materials and equipment incorporated into the Work will be new.
- .2 The Work and materials and equipment incorporated into the Work will be free from defects, including defects in the workmanship or materials.
- .3 The Work and equipment incorporated into the Work will be fit for the purpose for which they are intended.
- .4 The Work and materials and equipment incorporated into the Work will be merchantable.
- .5 The Work and materials and equipment incorporated into the Work will conform to the Contract Documents.

3.5.2 (Add) "Upon notice of the breach of the foregoing warranties or guarantees or other warranties or guarantees under the Contract Documents, the Contractor, in addition to other requirements in the Contract Documents, will commence to correct such breach and damage resulting therefrom within 48 hours after written notice thereof, thereafter will use its best efforts to correct such breach and damage to the satisfaction of the Owner and, except where an extension of time is granted in writing by the Owner, correct such breach and damage to the satisfaction of the Owner within 30 days of such notice; provided that if such notice is given after final payment hereunder, such 48 hour period shall be extended to 7 days. If the Contractor fails to commence to correct such breach and damage, or correct such breach and damage as provided above, the Owner, upon written notice to the Contractor and without prejudice to its other written notice to the Contractor and without prejudice to his other rights or remedies, may correct the deficiencies. The Contractor upon written notice to the Owner shall pay the Owner, within 10 days after the date of such notice, the Owner's costs and expenses incurred in connection with such correction, including without limitation the Owner's administrative and legal expenses. The foregoing warranties and obligations of the Contractor shall survive the final payment and termination of the Contract."

3.6 TAXES

3.6.2 (Add) . . . "Contractor shall pay all State and Federal taxes levied on his business, income, or property, and he shall make all contributions for Social Security and other wage or payroll taxes. Contractor shall be solely responsible for such payments, and shall indemnify Owner and Construction Manager and hold them harmless for any assessment and payment of same."

3.7 PERMITS, FEES AND NOTICES

Delete this Paragraph in its entirety. Refer to Section 01010 - Summary of the Work, for provisions on this subject. References to Paragraph 3.7 elsewhere in the Contract Documents shall read as referring to that Section in the Specifications.

3.9 SUPERINTENDENT

3.9.2 (Add) . . . "The Superintendent shall be satisfactory to the CM and the Owner, and the CM and Owner shall have the right to require the Contractor to remove a Superintendent from the Project whose performance is not satisfactory, and to replace the Superintendent with a Superintendent who is satisfactory to the CM and Owner. The Contractor shall not replace the Superintendent without the consent of the CM and the Owner, except with another Superintendent who is satisfactory to the CM and Owner."

3.10 CONTRACTOR'S CONSTRUCTION SCHEDULE

Delete this Paragraph in its entirety. Refer to Section 01300 - Submittals, for provisions on this subject. References to Paragraph 3.10 elsewhere in the Contract Documents shall read as referring to that Section in the Specifications.

3.11 DOCUMENTS AND SAMPLES AT THE SITE

Delete this Paragraph in its entirety. Refer to Section 01700 - Project Closeout, for provisions on this subject. References to Paragraph 3.11 elsewhere in the Contract Documents shall read as referring to that Section in the Specifications.

3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

Delete this Paragraph in its entirety. Refer to Section 01300 - Submittals, for provisions on this subject. References to Paragraph 3.12 elsewhere in the Contract Documents shall read as referring to that Section in the Specifications.

3.13 USE OF SITE

Delete this Paragraph in its entirety. Refer to Section 01300 - Submittals, for provisions on this subject. References to Paragraph 3.13 elsewhere in the Contract Documents shall read as referring to that Section in the Specifications.

3.14 CUTTING AND PATCHING

Delete this Paragraph in its entirety. Refer to Section 01045 - Cutting and Patching, for provisions on this subject. References to Paragraph 3.14 elsewhere in the Contract Documents shall read as referring to that Section in the Specifications.

3.15 CLEANING UP

Delete this Paragraph in its entirety. Refer to Section 01560 - Construction Cleaning, for provisions on this subject. References to Paragraph 3.15 elsewhere in the Contract Documents shall read as referring to that Section in the Specifications.

3.18 INDEMNIFICATION

3.18.1 (Replace with the following) "The Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, Construction Manager, and agents and employees of them from and against claims, damages, losses and expenses, including but not limited to attorneys' and consultants' fees and the cost of their staff, arising out of or related to the performance of the Work, including but not limited to claims for bodily injury, sickness, disease or death, or to injury to or destruction of or loss of use of real or personal property, claims due to delays in or acceleration of the work of other Contractors, claims for loss of productivity, claims for additional storage and handling charges, claims for escalation of the cost of labor and

materials, claims for home office overhead, liens against funds, and claims related to the removal, handling or use of hazardous materials; provided that the Contractor shall not be required to indemnify the Owner, Architect, Architect's consultants, Construction Manager, or the agents and employees of them for damages arising out of bodily injury to persons or damage to property initiated or proximately caused by or resulting from negligence of the Owner, its dependent contractors, agents, employees or indemnities. The Owner may set off an amount equal to the sums for which it is entitled to be indemnified from the amounts otherwise due the Contractor under the Contract Documents.

ARTICLE 4: ADMINISTRATION OF THE CONTRACT

4.1 THE ARCHITECT

4.1.1 (Replace last sentence with) . . . "The term "Architect," "Architect/Engineer," or "Engineer" as used herein means the Architect or his authorized representative."

4.5 Delete this Paragraph in its entirety. Arbitration is not applicable to this Project.

4.6 ADMINISTRATION OF THE CONTRACT

4.6.5 (Change the phrase in the first sentence) . . . "Work is being performed in a manner indicating that the Work, when completed, will be in accordance with the Contract Documents," to read . . . "Work is proceeding in accordance with the Contract Documents."

4.6.12 Delete this subparagraph in its entirety. Refer to Section 01300 - Submittals, for provisions on the subject. References to subparagraph 4.6.12 elsewhere in the Contract Documents shall read as referring to that Section in the Specifications.

4.6.15 Delete this Paragraph in its entirety. Refer to Section 01700 - Project Closeout, for provisions on the subject. References to subparagraph 4.6.15 elsewhere in the Contract Documents shall read as referring to that Section in the Specifications.

4.6.17 Delete this Paragraph in its entirety.

4.7 CLAIMS AND DISPUTES

4.7.1 (Add to the end of Subparagraph 4.7.1) . . . "The Contractor shall not knowingly (as "knowingly" is defined in the Federal False Claims Act, 31 USC Section 3729 et seq.) present or cause to be presented a false or fraudulent Claim. As a condition precedent to making a Claim, the Claim shall be accompanied by an affidavit sworn to before a notary public or other person authorized to administer oaths in the State of Montana and executed by an authorized representative of the Contractor, which states that:

The Claim which is submitted herewith complies with Subparagraph 4.3.1 of the Supplementary General Conditions, which provides that the Contractor shall not knowingly present or cause to be presented a false or fraudulent Claim."

4.7.2 (Modify as follows) Delete the phrase "arbitration or" from the second and third sentences of this Subparagraph. Add the following text at the end of the second sentence of this Subparagraph: . . . "provided, with respect to Claims submitted more than one year after payment is due, the decision by the Architect shall not be a condition precedent to or litigation, and the Claim need not be submitted to the Architect."

4.7.3 Delete this Subparagraph in its entirety.

4.7.4 (Delete from the first sentence the following) . . . "including arbitration." . . .

4.7.5 (Add the following additional Clauses):

"4 Claims for Indemnification;

.5 Claims about which the Owner has given the Contractor written notice;

.6 Claims arising after final payment."

4.7.6 (Add the following phrase at the beginning of last sentence) "Except as provided herein,"
. . . .

4.7.7 (Delete all text after "grounds" in line 13 of this Subparagraph and substitute the following text) . . . "the Contractor's Claim shall be made in writing within 21 days after the occurrence of the event giving rise to the Claim. Failure to do so shall be an irrevocable waiver of the Claim. Regardless of other provision in the Contract Documents to the contrary, the Contractor will not be entitled to damages or additional compensation from the Owner or Architect on account of delays caused by persons, except to the extent permitted under Paragraph 14.3."

4.7.8.1 (Delete from the second sentence the following) . . . "of cost and" . . . (Delete the text after "notice" in line 2 and substitute the following text and sentence) . . . "shall be given by the Contractor to the Architect within 7 days of its commencement. The failure to give such notice shall constitute an irrevocable waiver of the Claim. In the event of the continuing delay, only one claim is necessary."

4.7.9.1 (Add) "The Contractor causing damage to the Work of another Contractor shall be responsible for the repair and replacement of such damaged Work. Back charges shall be made when corrections are not made promptly."

4.7.9.2 (Add) "The Owner reserves the right to pay the Contractor originating the back charge from monies due the Contractor who is responsible for the Work required by same and shall deduct it from the amount due the said responsible Contractor."

4.7.9.3 (Add) "Contractor originating back charges will determine the amount of the back charges in accordance with Article 7, Changes in the Work, of the General Conditions of the Contract, in order to obtain the Architect's approval."

4.7.9.4 (Add) "Contractors under direct Contract with the Owner will be expected to take care of back charges originating with Subcontractors under their employ under the terms and conditions as established in the General Conditions of the Contract, Article 5 and Article 6. Contractors under direct Contract with the Owner, and their Sureties, shall indemnify and save the Owner harmless from claims of this type, including paying for legal expenses necessary to remove or settle any liens or other legal claims against the Owner."

4.8 RESOLUTION OF CLAIMS AND DISPUTES

4.8.4 (Delete from the first sentence the following) . . . "but subject to arbitration" . . .

4.8.5 (Add) . . . "Within 10 days of a written request, the Contractor will make available to the Owner or its representative books, records, or other documents in its possession or to which it has access relating to a claim and shall require its Subcontractors, regardless of tier, and materialmen to do likewise."

4.9 ARBITRATION

Delete this Paragraph in its entirety. This Paragraph does not apply to this Project. References to Paragraph 4.9 and arbitration elsewhere in the Contract Documents shall also be deleted and are not applicable for this Project.

ARTICLE 5: SUBCONTRACTORS

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

5.2.4 (Add) . . . "The Contractor shall notify the Owner, the Architect, and the Construction Manager of proposed substitution of Subcontractor, person, or entity a minimum of 10 days prior to proposed change. The Owner may require the Contractor to change a Subcontractor or Sub-subcontractor previously approved, and, if at such time the Contractor is not in default under this Agreement, the Contract sum shall be increased or decreased by the difference in the cost resulting from the change."

5.3 SUBCONTRACTUAL RELATIONS

5.3.2 (Add) . . . "Notwithstanding the provisions of Subparagraph 5.3.1, any part of the Work performed for the Contractor by a Subcontractor or its Sub-subcontractor shall be pursuant to a written Subcontract between the Contractor and such Subcontractor (or the Subcontractor and its Sub-subcontractor at any tier). The Construction Manager and the Architect will assume no responsibility for reviewing, monitoring, or verifying activities or relationships involving a Subcontractor or its Sub-subcontractor."

ARTICLE 6: CONSTRUCTION BY OWNER OR BY OTHER CONTRACTORS

6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION WITH OWN FORCES AND TO AWARD OTHER CONTRACTS

6.1.1 Delete the last sentence of this Subparagraph.

6.1.3 (Add) "Refer to Section 01010 - Summary of the Work, for provisions concerning the administrative responsibilities of Prime Contractors."

6.2 MUTUAL RESPONSIBILITY

6.2.4 Delete the word . . . "wrongfully" . . . in this Subparagraph.

6.2.5 (Add the following sentence at the end of this Subparagraph) . . . "If such other Contractors initiate legal or other proceedings against the Owner on account of damage alleged to have been caused by the Contractor, the Owner shall notify the Contractor, who shall defend such proceedings at its own expense, and if judgment or award against the Owner arises therefrom, the Contractor shall pay or satisfy it and shall reimburse the Owner for attorneys' fees and court or other costs which the Owner has incurred over and above those paid for

directly by the Contractor."

ARTICLE 7: CHANGES IN THE WORK

7.2 CHANGE ORDERS

7.2.1 (Add the following)... "Change orders shall be executed on AIA Document G701/CMA-1992."

7.2.2 (Replace with the following) "Methods used in determining adjustments to the Contract Sum shall be those listed in Subparagraph 7.3.3."

7.3 CONSTRUCTION CHANGE DIRECTIVES

7.3.3.5 (Add) Change Order Pricing Guidelines

For each change over \$500.00, the Contractor shall furnish a detailed, written Proposal itemized according to these Pricing Guidelines. Any Subcontractor or Material Supplier pricing shall also be itemized according to these Pricing Guidelines. In order to expedite the review and approval process, all Proposals shall be prepared in the categories and in the order listed below.

- .1 Labor - All field labor shall be priced at the current base rate, excluding fringe benefits, of the prevailing wage in the Project locality. The payroll is to be based on straight time only and is to include number of hours and rate of pay for each classification of work. If overtime is approved, list only the straight time portion in this item.
- .2 Fringes - All established payroll taxes, assessments and fringe benefits on the labor in item .1. This may include, but is not limited to, FICA, Federal and State Unemployment, Health and Welfare, Pension Funds, Workers' Compensation and Apprentice Fund. Each of the fringes is to be a separate line item.
- .3 Equipment Rentals - All charges for certain non-owned heavy or specialized equipment at up to 100 percent of the documented rental cost. No rental charges will be allowed for hand tools, minor equipment, simple scaffolds, etc. Downtime due to repairs, maintenance and weather delays will not be allowed.
- .4 Owned Equipment - All charges for certain owned, heavy or specialized equipment at up to 100 percent of the cost listed by the Associated Equipment Dealers Blue Book. No recovery will be allowed for hand tools, minor equipment, simple scaffolds, etc. The longest period of time that the equipment is to be required for the Work will be the basis for the pricing. Downtime due to repairs, maintenance and weather delays will not be allowed.
- .5 Trucking - A reasonable delivery charge or per mile trucking charge for delivery of required materials or equipment. Charges for use of a pickup truck will not be allowed.
- .6 Overhead - Includes telephone, telephone charges, facsimile, telegrams, postage, photos, photocopying, hand tools, simple scaffolds (one level high), tool breakage, tool repairs, tool replacement, tool blades, tool bits, home office estimating and expediting, home office clerical and accounting support, home office labor, legal services, travel and parking expenses.

.7 Materials

- .1 All materials purchased by the Contractor and incorporated into the changed Work, showing costs, quantities, or Unit Prices of all items, as appropriate. Reimbursement or material costs shall only be allowed in the amount of the Contractor's actual cost including any and all discounts, rebates or related credits.
- .2 One third (33 percent) of the cost of reusable materials for each use, such as formwork lumber, shoring or temporary enclosures.

- .8 Miscellaneous - The following items are allowable at the cost of the Work, with no overhead or profit.
 - .1 The cost of extending the Bond and the cost of extending liability, property damage, builder's risk or specialty coverage insurance.
 - .2 The premium portion only for approved overtime (labor and fringes). The straight time portion is included in items .1 and .2.
 - .3 Fees for permits, licenses, inspections, tests, etc.

- .9 Costs which will not be reimbursed for Change Order Work include the following:
 - .1 Employee Profit Sharing Plans - regardless of how defined or described, the Contractor will pay these charges from Contractor profit and will not be reimbursed.
 - .2 Voluntary Employee Deductions - examples are United Way and U.S. Savings Bonds, etc.

7.3.3.6 (Add) "The cost of the Contractors overhead and profit on Change Orders shall be:"

- .1 For extra Work completed by the Contractor with his own labor, 15 percent shall be added to items .1, .2, .3, .4, .5, and .7 of Subparagraph 7.3.3.5 as an allowance for overhead and profit.
- .2 For extra Work completed by Subcontractors of the Contractor, 5 percent shall be added to items .1, .2, .3, .4, .5, and .7 of Subparagraph 7.3.3.5 as an allowance for overhead and profit.
- .3 For work deleted, which would have been completed by the Contractor or Subcontractor, 5 percent of items .1, .2, .3, .4, .5, and .7 of Subparagraph 7.3.3.5 shall be credited to the Owner as the allowance for unearned profit.

Example:	Labor	\$ 500.00
	Material	<u>500.00</u>
	Cost	\$1,000.00
(+)	5% unearned profit	(+) <u>50.00</u>
	Credit to Owner	\$1,050.00

7.3.6 (Change the phrase in the first sentence) . . . "a reasonable allowance for overhead and profit" . . . to read . . . "an allowance for overhead and profit in accordance with the schedule set forth in this Subparagraph 7.3.6 below."

7.3.6 (Add)... "In Subparagraph 7.3.3 and in this Subparagraph the allowance for overhead and profit combined, included in the total cost to the Owner, shall be based on the following schedule:

- .1 For extra Work completed by the Contractor with his own labor, 15 percent shall be added as the allowance for overhead and profit.
- .2 For extra Work completed by the Subcontractors of the Contractor, 5 percent shall be added as the allowance for overhead and profit.
- .3 For Work deleted which would have been completed by the Contractor, with his own labor, 10 percent shall be credited to the Owner as the allowance for overhead and profit.
- .4 For Work deleted which would have been completed by Subcontractors of the Contractor, 5 percent shall be credited to the Owner by the Contractor as the allowance for overhead and profit."
- .5 In order to facilitate checking of quotations for extras or credits, proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials, and Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also. In no case will a change involving over \$500 be approved without such itemization. The Contractor shall submit same to the Construction Manager within 14 days after receipt of proposal request."

7.3.7 (Revise the last sentence of Subparagraph 7.3.7 to read as follows) . . . "When both additions and deletions are involved in any one change, the allowance for overhead and profit shall be figured on the basis of net increase or decrease, if any."

7.3.9 (Add the following) . . . "When either the Owner or the Contractor disagree with the determination made by the Construction Manager concerning adjustments in the Contract Sum and Contract Time, such disagreement shall be resolved in the manner set forth in Paragraph 4.8."

ARTICLE 8: TIME

8.1 DEFINITIONS

8.1.2 (Delete the first sentence and replace with the following) "The date of commencement of the Work is the effective date established in the Agreement or the date established in the notice to proceed given by the Owner." . . .

8.3 DELAYS AND EXTENSIONS OF TIME

8.3.1 (Delete and replace with the following) "If the Contractor is delayed at in its progress of the Work by one of the delays for which an extension of time is permitted and gives the Construction Manager written notice specifically describing the delay within 48 hours of its commencement, the date for the Substantial Completion of the Work will be extended by Change Order for such reasonable time as the Construction Manager may determine. The failure to give such notice will constitute an irrevocable waiver of the Contractor's right to seek an extension for such delay. The only delays for which the Contractor will be entitled to an extension of the time for completion will be delays caused by the Architect, Construction Manager, or the Owner, physical damage to the Project over which the Contractor has not control, labor disputes beyond the control of the Contractor, and unusually severe weather conditions not reasonably anticipated (temperature, rain, or other precipitation within a range of twenty percent of normal amounts for the time of the year covered by the Agreement shall not be considered unusually severe weather conditions). Extensions of time will only be granted pursuant to the procedures for Change Orders set forth in the General Conditions. The

Contractor agrees not to make claims for compensation for delays or acceleration in the performance of the Work resulting from acts or failure to act by the Owner, the Architect, Construction Manager, or the employees, agents, or representatives of the Owner, Construction Manager, or the Architect and agrees that such claim shall be fully compensated by an extension of time to complete the Work, regardless of when granted."

ARTICLE 9: PAYMENTS AND COMPLETION

9.2 SCHEDULE OF VALUES

Delete this Paragraph in its entirety. Refer to Section 01300 - Submittals, for provisions on this subject. References to Paragraph 9.2 elsewhere in the Contract Documents shall read as referring to that Section in the Specifications.

9.3 APPLICATIONS FOR PAYMENT

9.3.1 (Delete this Subparagraph, Clauses 9.3.1.1 and 9.3.1.2, and substitute the following) "Applications for payment shall be made at approximately 30 day intervals in accordance with the dates established in the Standard Form of Agreement Between Owner and Contractor. At least 15 days before each progress payment falls due, the Contractor shall submit to the Construction Manager, in quintuplet, an itemized Application for Payment, supported by such data substantiating the Contractor's right to payment as the Owner, Construction Manager, or the Architect may require. The form of Application for Payment shall be AIA Document G702/CMa (1992) - Application and Certification for Payment, supported by AIA Document G703 (1992) - Continuation Sheet. No other forms of Application for Payment will be acceptable. Continuation Sheet (G703) shall be prepared the same as in the Schedule of Values submitted by the Contractor.

- .1 Such applications may include requests for payment on account of changes in the Work which have been properly authorized by Construction Change Directives but not yet included in Change Orders.

9.3.1.3 (Add) "Contractor shall submit with each monthly Application for Payment 1) an Affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the previous Application, was submitted and the Owner or his property might in any way be responsible, have been paid or otherwise satisfied, and 2) release or waivers of liens arising out of the Contract from each Subcontractor, materialmen, supplier, and laborer of the Contractor."

9.3.2 (To supplement this Subparagraph, add the following) "Payment to Contractor for materials stored off site is discouraged. Where circumstances indicate that the Owner's best interest is served by off-site storage, the Contractor shall make written request to the Construction Manager for approval to include such material costs in his next progress payment. The Contractor's request shall include the following information:

- .1 A list of the fabricated materials consigned to the project (which shall be clearly identified), giving the place of storage, together with copies of invoices and reasons why materials cannot be delivered to the site.
- .2 Certification that items have been tagged for delivery to the project and that they will not be used for another purpose.
- .3 A letter from the Bonding Company indicating agreement to the arrangements and

that payment to the Contractor shall not relieve either party or their responsibility to complete the facility.

- .4 Evidence of adequate insurance covering the material in storage, which shall name the Owner as additionally insured.
- .5 Costs incurred by the Construction Manager and Architect to inspect material in off-site storage shall be paid by the Contractor.
- .6 Subsequent pay requests shall itemize the materials and their cost which were approved on previous pay requests and remain in off-site storage.
- .7 When a partial payment is allowed on account of material delivered on the site of the Work or in the vicinity thereof or under possession and control of the Contractor but not yet incorporated therein, such material shall become the property of the Owner, but if such material is stolen, destroyed or damaged by casualty before being used, the Contractor will be required to replace it at his own expense.

9.3.4 (Add) "Until final payment, the Owner will pay 90 percent of the amount(s) submitted by the Contractor on his monthly application for payment and as approved by the Architect, for labor performed and work properly in place, and for materials delivered to the site of the Work or in an approved storage site (10 percent remainder is retainage).

- .1 There shall be no reduction of retainage granted on this project."

9.3.5 (Add) "Partial or full payment to the Contractor(s) for material, equipment, or work in place shall not start the warranty period specified in Division 1, Section 01600.

9.5 DECISIONS TO WITHHOLD CERTIFICATION

9.5.1 (Delete Clauses .1 through .7 and replace with the following)

- .1 The Contractor is in default of the performance of any of its obligations under the Contract Documents, including, but not limited to: failure to provide sufficient skilled workers; work, including equipment or materials, which is defective or otherwise does not conform to the Contract Documents; failure to conform to the Project Time Schedule; or failure to follow the directions of or instructions from the Architect or Owner.
- .2 The Contractor is in default of the performance of any of its obligations under another Contract which it has with the Owner.
- .3 The filing of the third party claims or reasonable evidence that third party claims have been or will be filed.
- .4 The Work has not proceeded to the extent set forth in the Application for Payment.
- .5 Representations made by the Contractor are untrue.
- .6 The failure of the Contractor to make payments to its Subcontractors, materialmen, or laborers.

- .7 Damage to the Owner's property or the property of another Contractor or person.
- .8 The determination by the Architect that there is a substantial possibility that the Work cannot be completed for the unpaid balance of the Contract Sum.
- .9 Liens filed or reasonable evidence indicating the probable filing of such liens.

9.5.3 (Add) "Contractors application for payment shall reflect an equal percentage amount (within 2-3 percent) for labor and materials for Work completed. The Construction Manager and the Architect may adjust applications where labor exceeds materials or where materials exceed labor quantities in the Work completed columns."

9.5.4 (Add) "If the Contractor disputes a determination by the Construction Manager and the Architect with regard to Certificate of Payment, the Contractor nevertheless shall continue to prosecute the Work."

9.7 FAILURE OF PAYMENT

9.7.1 (Change text) Each time "seven" appears in this Subparagraph, replace with "fourteen". Delete the words "or awarded by arbitration" from the first sentence.

9.8 SUBSTANTIAL COMPLETION

9.8.1 (After . . . "Contract Documents" . . . insert the following) . . . "and when all required occupancy permits, if any, have been issued" . . .

9.8.2 (Add the following at the end of this Subparagraph) . . . "The time fixed by the Architect for the completion of all items on the list accompanying the Certificate of Substantial Completion shall not be greater than 21 days. The Contractor shall complete items on the list within such 21 day period. If the Contractor fails to do so, the Owner in its discretion may perform the Work by itself or others and the cost thereof shall be charged against the Contractor. If more than one inspection by the Architect for the purpose of evaluating corrected work is required by the subject list of items to be completed or corrected, it will be performed at the Contractor's expense.

- .1 At the time the Architect commences the Substantial Completion Inspection, if the Architect discovers excessive additional items requiring completion or correction, the Architect may decline to continue the inspection, instructing the Contractor as to the general classification of deficiencies which must be corrected before the Architect will resume the Substantial Completion Inspection. If the Contractor fails to pursue the Work so as to make it ready for Substantial Completion Inspection in a timely fashion, the Architect shall, after notifying the Contractor, conduct inspections and develop a list of items to be completed or corrected. This list of items shall be furnished to the Contractor who shall proceed to correct such items within 21 days. The Architect will conduct additional inspections as required to determine that the Work is ready for Substantial Completion Inspection. The Architect will invoice the Owner for 1) The cost of inspections between the termination of the initial Substantial Completion Inspection and the commencement of the satisfactory Substantial Completion Inspection, 2) The cost of inspection or review after the 21 day period established for the completion of the list by the Contractor. The Contractor shall reimburse the Owner for such cost, and the Owner may offset the amounts payable to the Architect for such services from the amounts due the Contractor under the Contract Documents."

9.9 PARTIAL OCCUPANCY OR USE

9.9.1 (Place a period after "complete" in line 8 and delete the remainder of the text in this Subparagraph and replace with the following) . . . "In the event of such partial occupancy or use, the Construction Manager shall assign responsibilities to the Owner and the Contractor with respect to payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work, insurance, and the commencement of warranties required by the Contract Documents."

9.9.4 (Add) "Any Agreement as to the acceptance of the Work not complying with the requirements of the Contract Documents shall be in writing."

9.10 FINAL COMPLETION AND FINAL PAYMENT

9.10.2 (Add the following) "The Contractor shall furnish such evidence as may be necessary to show that any out-of-state subcontractor or supplier has fully met the requirements of payment of taxes as established in any law of the State or local subdivision thereof which may be in effect at the time of final payment. The Owner will require the submission of such proof or evidence before final payment will be approved or made. The following must be submitted to the Construction Manager before approval of final payment:

- .1 Affidavit of payment as required under this Paragraph shall be in the form of AIA Document G706 - Contractor's Affidavit of Payment of Debt and Claims.
- .2 Release of liens as required under this Paragraph shall be in the form of AIA Document G706A - Contractor's Affidavit of Release of Liens.
- .3 Consent of Surety as required under this Paragraph shall be in the form of AIA Document G707 - Consent of Surety Company to Final Payment.
- .4 Submit releases and final waivers of lien from major subcontractor and supplier.
- .5 Submit certification stating that no materials containing asbestos were incorporated into the Work."
- .6 Submit certification that all punch list items have been completed.

9.10.3 Change "Subparagraph 4.4.5" to "Subparagraph 4.7.5" in the last sentence . . . (Add the following) "Final payment, constituting the unpaid balance of the contract sum, shall be paid to the Contractor in full, including retainage or escrowed principal and escrowed income by the escrow agent, no less than 61 days following the date of Substantial Completion. If at that time there are remaining uncompleted items, an amount equal to 200 percent of the value of each item as determined by the Construction Manager and Architect shall be withheld until said items are completed, and a Final Certificate of Payment issued by the Architect and Construction Manager."

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

10.1.2 (Delete the following from the last sentence) . . . "or in accordance with final

determination by the Architect on which arbitration has not been demanded, or by arbitration under Article 4."

10.2.1 (Revise Line 1 to read) "The Contractor shall take every reasonable precaution for" . .

10.2.8 (Add) "The Contractor acknowledges that the safety of the Owner's students, employees, and guests is of the utmost importance. The Contractor will take no action which would jeopardize the safety of the Owner's students, employees, or guests and, without the Owner's written approval, shall take no action which would interfere with the Owner's activities."

10.3 EMERGENCIES

10.3.1 (To the end of this Subparagraph add the following) "Nothing in this paragraph shall be construed as relieving the Contractor from the cost and responsibility for emergencies covered hereby, which with normal diligence, planning, and the close supervision of the Work as required under the Contract, could have been foreseen or prevented."

10.4 FEDERAL RIGHT-TO-KNOW LAW - as defined under Subpart D, Occupational Health & Environmental Controls, Paragraph 1926.59 Hazard Communication.

10.4.1 All Contractors must conform to the provisions of the Federal Right-to-Know Law, 1986 PA 80, which requires employers to:

1. Develop a communication program designed to safeguard the handling of hazardous chemicals through labeling of chemical containers, and development and availability of Material Safety Data Sheets:
2. Provide training for Employees who work with these chemicals; and
3. Develop a written hazard communications program.

10.4.2 The law also provides for specific Employee rights. These include:

1. The right to be notified (by Employer or Contractor posting) of the location of Material Safety Data Sheet (MSDS);
2. The right to be notified (by Employer or Contractor posting) of new or revised MSDS's no later than 5 working days after receipt; and
3. The right to request copies of MSDS's from their Employers.

10.4.3 Provisions of Federal Right-to-Know Law may be found in those sections of the Michigan Occupational Safety and Health Act (MIOSHA) which contain Right-to-Know provisions, and the Federal Hazard Community Standard, which is part of the Federal Right-to-Know Law through adoption.

ARTICLE 11: INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.1 (After "companies" in line 2, add the following Phrase) . . . "rated A+, A, or A- by Best Insurance Reports and" . . .

11.1.1 (Add the following Clause)

- .8 Liability insurance shall include all major divisions of coverage and be on a comprehensive basis including:
- .1 Premises' Operations (deleting X, C, or U exclusions)
 - .2 Owner's and Contractor's Protective
 - .3 Products and Completed Operations
 - .4 Contractual - including specific provisions for the Contractor's obligations under Paragraph 3.18
 - .5 Any auto
 - .6 Broad Form Property Damage including Completed Operations"

11.1.2 (Revise the first sentence to read) "The insurance required by Subparagraph 11.1.1 shall be written for not less than the limits of liability shown the "Schedule of Insurance Coverages Required" following these Supplementary Conditions, or required by law, whichever is greater, and with the Owner and/or its assignee, Architect, and Construction Manager named as "Additional Insureds" on the insurance policy."

11.1.3 (Delete the first sentence and replace with the following) "The Contractor shall submit to the Architect and Construction Manager a copy of Certificates of Insurance for their review and the Owner's approval prior to commencement of the Work. The form of certificate preferred is AIA Document G705, Certificate of Insurance. Certificates shall include each and every type of coverage specified."

11.3 PROPERTY INSURANCE

11.3.1 (Add) "Certificates for this insurance shall name the Construction Manager and Architect as additionally insured.

11.3.1.1 (Change to read as follows) "The property insurance purchased by the Owner shall be in the form and provide such coverage as selected by the Owner. The Owner will make the policy available for inspection and copying by the Contractor. This insurance is not intended and will not cover machinery, tools, and equipment which will not be a permanent part of the project. The Contractor shall bear the entire risk of loss with respect to such machinery, tools, and equipment."

11.3.1.3 (Change to read as follows) "The all-risk policy shall carry a deductible to be established prior to award of Contract. The deductible shall be paid by the Owner."

11.3.1.5 Delete this Subparagraph in its entirety.

11.3.9 (Delete the following in the third sentence) . . . "or in accordance with an arbitration award in which case the procedure shall be as provided in Paragraph 4.9."

11.3.10 Delete the text after "loss" in line 2.

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK**12.2 CORRECTION OF WORK**

12.2.1 (Replace this Subparagraph with the following) "Within 48 hours after written notice from the Architect, Construction Manager, or the Owner (except such period shall be 7 days

when notice is given after final payment) that the work does not conform to the Contract Documents, or immediately upon oral notice, if the nonconformance constitutes a threat to the safety of persons or property, the Contractor, without waiting for the resolution of disputes that may exist, shall commence to correct such nonconformance, shall thereafter use its best efforts to correct such nonconformance to the satisfaction of the Architect and the Owner, and except where an extension of time is granted in writing by the Owner, shall complete necessary corrections so that the nonconformance is eliminated to the satisfaction of the Architect, Construction Manager, and the Owner within 30 days of such notice. The Contractor shall bear all costs of correcting the nonconformance, including additional testing and inspections and additional service fees of the Construction Manager and Architect. The notice provided for in this Subparagraph 12.2.1 may be given at any time. It is the intent that the obligations under this Subparagraph 12.2.1 shall continue to apply after final completion and final payment."

12.2.4 (Modify the first two sentences of Subparagraph 12.2.4 to read as follows) "If the Contractor fails to correct nonconforming Work as provided in Subparagraph 12.2.1, the Owner may correct it in accordance with Paragraph 2.4. If the Contractor does not proceed with correction of such nonconforming Work as provided in Subparagraph 12.2.1, the Owner may remove it and store the salvageable materials or equipment at the Contractor's expense." . . .

12.3 ACCEPTANCE OF NONCONFORMING WORK

12.3.1 (To the end of this Subparagraph add the following) "The acceptance of nonconforming Work by the Owner shall be by written Change Order, signed by the Owner's authorized representative. No person has authority to accept nonconforming work except pursuant to such written Change Order."

ARTICLE 13: MISCELLANEOUS PROVISIONS

13.5 TESTS AND INSPECTIONS

13.5.1.1 (Add) "Refer to Section 01400 - Quality Control, for additional provisions on this subject."

13.5.4 (Delete this Subparagraph in its entirety and replace with the following) "Certificates of inspection, testing, or approval, as required by Paragraphs 13.5.1 or 13.5.2, shall be secured by the Contractor using an independent agency, subject to the approval of the Architect, Construction Manager, and Owner. The independent agency shall complete field work, testing, and prepare the test reports, logs, and certificates promptly; and deliver the required number of copies directly to the Construction Manager for transmittal to the Architect."

13.6 INTEREST

Delete this Paragraph in its entirety. References to Paragraph 13.6 elsewhere in the Contract Documents shall also be deleted.

ARTICLE 14: TERMINATION OR SUSPENSION OF THE CONTRACT

14.1 TERMINATION BY THE CONTRACTOR (Delete this Paragraph in its entirety and replace with the following.)

14.1 (Add) DEFAULT OF THE CONTRACTOR

14.1.1 Events of Default; each of the following constitutes an event of default of the Contractor:

- .1 The failure of the Contractor to perform its obligation under the Contract Documents or under the Contract Documents pertaining to other agreement which the Contractor may have with the Owner and to proceed to commence to correct such failure within 48 hours after written notice thereof from the Owner, Construction Manager, or the Architect or such lesser time as is provided in the Contract Documents, or thereafter to use its best efforts to correct such failure to the satisfaction of the Owner, or, except where an extension of time is granted in writing by the Owner, to correct such failure within 30 days after written notice thereof.
- .2 The failure of the Contractor to pay its obligations as they become due, or the insolvency of the Contractor.

14.1.2 Owner's Remedies; upon the occurrence of an event of default the Owner will have the following remedies, which will be cumulative:

- .1 To order the Contractor to stop the Work or part of it, in which case the Contractor will do so immediately;
- .2 To perform through others all or part of the Work remaining to be done and to deduct the cost thereof from the unpaid balance of the Contract Price;
- .3 To terminate this Agreement and take possession, for the purpose of completing the Work or part of it, materials, equipment, scaffolds, tools, appliances, and other items belonging to or possessed by the Contractor, of which the Contractor hereby transfers and assigns to the Owner for such purpose, and to employ a person or persons to complete the Work, including the Contractor's employees, and the Contractor will not be entitled to receive further payment until the Work is completed;
- .4 Other remedies which the Owner may have at law or in equity or otherwise under the Contract Documents.

14.1.3 Payments Due Contractor: If the unpaid balance of the Contract Sum exceeds the cost of finishing the Work, including compensation of the Architect's and Construction Manager's additional services and costs, expenses, or damages incurred by the Owner as a result of the event of default, including attorney's fees and the administrative expense of the Owner's staff, such excess will be paid by the Contractor. If such costs exceed the unpaid balance, the Contractor will pay the difference to the Owner. The amounts to be paid by the Owner or the Contractor will be certified by the Construction Manager and the Architect, and such certification will be the final determination of the amount owed, except for sums coming due thereafter. The obligations under this Subparagraph will survive the termination of this Agreement.

14.2 TERMINATION BY THE OWNER FOR CAUSE (Delete this Paragraph in its entirety and replace with the following)

14.2 (Add) DEFAULT OF THE OWNER

14.2.1 Events of Default; except of the failure to pay the Contractor which will be subject to the terms of the General Conditions and Supplementary Conditions of the Contract, the following constitutes the exclusive event of default of the Owner:

- .1 The failure of the Owner to perform its obligations under the Contract Documents and to correct such failure within 90 days after written notice thereof from the Contractor.

14.2.2 Contractor's Remedies; upon the occurrence of an event of default by the Owner, unless the Owner admits in writing that it is in default, except as expressly provided in the General Conditions or the Supplementary Conditions of the Contract, the Contractor's sole and exclusive remedy will be to submit the dispute to the Architect for its decision under Paragraphs 4.7 and 4.8 of the General and Supplementary Conditions of the Contract for the Project. If the Owner admits in writing that it is in default, then the Contractor will be entitled to remedies which it would otherwise have at law or in equity.

14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE (Delete this Paragraph in its entirety and replace with the following)

14.3 (Add) TERMINATION FOR THE CONVENIENCE OF THE OWNER

14.3.1 The Owner may, in its discretion and without cause, by written notice to the Contractor terminate the Contract for the Owner's convenience.

14.3.2 Upon receipt of a written notice from the Owner terminating the Contract without cause and for the Owner's convenience, the Contractor will i) immediately cease performing the Work, unless otherwise directed by the Owner, in which case the Contractor will take the action directed by the Owner, ii) take reasonable and necessary action to protect and preserve the Work, and iii) unless otherwise directed by the Owner, terminate agreements with Subcontractors and suppliers.

14.3.3 If the Contract is terminated without cause and for the Owner's convenience and there exists no event of the Contractor's default, as defined in Paragraph 14.1 of these Supplementary Conditions, the Owner will pay the Contractor, for Work performed under the Contract up to the date the notice of termination is received by the Contractor at the rates for Work performed under the Contract, including overhead and profit up to the date of termination, for Work necessary to protect and preserve the Work, as determined by the procedures applicable to Change Orders under Subparagraph 7.3.3, the reasonable and necessary costs of terminating the Contractor's agreements with Subcontractors and suppliers, and other costs incurred by the Contractor directly as a result of the termination of the Contract.

14.3.4 If the Contract is terminated without cause and for the Owner's convenience and there exists an event of the Contractor's default, as defined in Paragraph 14.2 of these Supplementary Conditions, the Contractor will be entitled to receive only such sums as it would be entitled to receive following the occurrence of an event of default under the Standard Form of Agreement Between Owner and Contractor.

14.3.5 The termination of the Contract shall be with or without prejudice to rights or remedies which exist at the time of termination.

ARTICLE 15: (Add) EQUAL OPPORTUNITY

15.1 POLICIES OF EMPLOYMENT

15.1.1 The Contractor and Subcontractors shall not discriminate against employee or applicant for employment because of race, religion, color, sex, or national origin. The Contractor shall take affirmative action to insure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or

transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the policies of non-discrimination.

15.1.2 The Contractor and Subcontractors shall, in solicitations or advertisements for employees placed by them or on their behalf, state that qualified applicants will receive consideration for employment without regard to race, religion, color, sex, or national origin.

END OF SECTION 00813



1 GENERAL

1.1 SCOPE OF WORK

Contractor shall provide all labor, materials, equipment, permits, inspection fees, utility company charges, supervision and other items noted in contract General Conditions necessary to yield completely operable and tested systems as shown on the Plans and specified herein. The Work includes, but is not limited to, the following areas:

- A. Sitework: Storm, sanitary, fire protection, potable water, gas, steam, etc.
 - 1. Connect sanitary discharge from new sump pumps in Boiler House to existing sanitary manhole in courtyard per the plans.
- B. Building Work:
 - 1. Cut and cap the plumbing and heating lines in the tunnel and in the Boiler House which serve the old Pattengill building per the plans. These include domestic water, steam, condensate, gas, and storm.
 - 2. Relocate the existing air compressor into the Boiler House. Reconnect the air line.
 - 3. Replace a section of the existing city water line in the old coal bunker adjacent to the Boiler House with ductile iron pipe so the pipe can be buried. The old coal bunkers will be filled in.
 - 4. Install new floor drains and a sump with pumps to handle all equipment in the Boiler House. The floor must be cut to install the new drains. Plug the existing floor drains and abandon the existing underground drains.
 - 5. Piping, valve, and equipment identification per Section 15.010.
 - 6. Mechanical insulation for piping system and equipment as specified.
- C. All equipment furnished and installed shall comply with the relevant agency listing, testing, and labeling requirements of the Michigan Mechanical Code.
- D. Flushing, cleaning, and pressure testing of installed systems, especially piping and ductwork. Complete pressure test form in Section 15005, or Owner's or other approved (e.g. NFPA) pressure test form(s).
- E. Cleanup associated with work of respective trades.
- F. No asbestos or mercury containing materials, materials capable of discharging lead into potable water or air systems, or materials capable of releasing other hazardous substances to the facility air environment, drainage systems, or water systems shall be used.
- G. Exterior aboveground piping which is not insulated or otherwise covered shall be primed/painted per spec section 9.990.



- H. Equipment schedules are provided as a convenience to the Contractor, but do not relieve him of his responsibility to furnish all items shown on the plans and indicated in the specifications.
- I. Coordination with other trades. Contractor shall assist in the field layout and coordination of equipment, ductwork, and piping installation and their relation with other trades at no additional cost to the owner.
- J. One year labor and equipment guarantee on completed installation of new systems.
- K. Job Site safety is the responsibility of the contractor. The architect/engineer bears no responsibility for job-site safety.
- L. Owner training in operation and maintenance of installed equipment and systems. Using the Operating and Maintenance manuals, balancing report data, and construction plans and specifications, contractor shall instruct owner's representatives in the proper operation of the equipment and systems installed to their mutual satisfaction. This activity shall take place near the point of substantial completion and will be considered one of the final punch list issues. Training shall consist of a period of "classroom" instruction providing a general overview of the facility equipment and systems plus a tour of the facility and its equipment pointing out specific maintenance issues for each area and item of equipment. When the training is complete owner shall be provided with a training certificate by the contractor by which the owner will acknowledge that such training has taken place.



1 GENERAL

1.1 STANDARDS

- A. All work shall be executed in a workmanlike manner and shall be coordinated with other work being performed at the site. The Architect/Engineer reserves the right to direct the removal and replacement of any item which in his opinion will not present an orderly and reasonably neat or workmanlike appearance. Such removal or replacement shall be at the Contractor's expense.
- B. The Contractor shall pay all taxes, fees, licenses, permits and inspection costs required in connection with the work.

1.2 COMPLIANCE

All work and materials shall comply with all applicable laws and building codes and shall conform to the applicable sections of the following codes and standards. Where standards or codes are mentioned in these specifications, the edition or revision in effect during construction of this project shall be followed; hence, the specified numbers may be superseded by new numbers.

American Disabilities Act
Air Moving and Conditioning Associations, Inc.
Air-Conditioning and Refrigeration Institute
American National Standards Institute (ANSI)
American Society of Civil Engineers (ASCE)
American Society for Testing Materials (ASTM)
American Society of Mechanical Engineers (ASME)
American Water Work Association (AWWA)
American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE)
Applicable Codes of the State of Michigan and other agencies having jurisdiction
Cast Iron Soil Pipe Institute
Institute of Boiler and Radiator Manufacturers (IBR)
International Approval Services (IAS) (formerly AGA)
Michigan Department of Labor Construction Code Commission Rules
MIOSHA -Michigan Occupational Safety and Health Act
NAFM - Sound Test Codes
National Board of Fire Underwriters
National Electrical Code
National Electrical Manufacturers Association
National Fire Protection Association (NFPA)
National Plumbing Code
OSHA Standards, particularly #1910
Sheet Metal and Air-Conditioning Contractors National Association
Standards of the Hydraulic Institute
Underwriters' Laboratories (UL)
BOCA Basic Plumbing & Mechanical Codes or Uniform Plumbing and Mechanical Codes or International or respective State Plumbing and Mechanical Codes where applicable, e.g. Michigan Mechanical and Michigan Plumbing code



International Society for Measurement and Control (ISA)

1.3 SUBSTITUTIONS AND CHANGES

- A. If a Contractor should desire to bid an item not specified, he shall comply with applicable sections of this Specification and also Section 3.3 of AIA A-701 Instructions to Bidders and other instructions to bidders.
- B. It shall be the responsibility of the contractor to notify all parties concerned of any changes or substitutions he has been authorized to make, and he must include in his notice a full description, including drawings, if necessary, of any deviation from dimension shown on the plans or applicable to manufacturer's named on schedules and named in specifications.
- C. If equipment is provided other than that upon which the design is based, contractor shall coordinate the installation with the work of all other trades and with the space available for installation. Contractor shall pay for any changes caused to other trades as a result of this substitution, plus the additional cost of any required engineering needed to incorporate the proposed alternates.

1.4 EQUIPMENT LISTS AND IDENTIFICATION

- A. Each Contractor supplying equipment items shall furnish three sets of construction books and spare parts list recommended for the proper operation and maintenance of the equipment. State exact quantity so there is no argument.
- B. All major parts of built-up equipment or devices shall bear the manufacturer's nameplate; giving name of manufacturer, description, size, type, serial number, electrical characteristics, and related data.
- C. Operation and maintenance data for all equipment should be assembled in binders and submitted to the Commissioning Agent (or Engineer, Construction Manager, or Owner as applicable to the particular project).

1.5 DRAWINGS

- A. Due to the scale of the drawings, it is not always possible to indicate all offsets, fittings, valves, and similar items which may be required. This Contractor shall carefully investigate the structural and finish conditions affecting his work and shall plan accordingly, furnishing such valves, fittings, offsets, vents, drains and specialties as may be required to meet such conditions. All piping shall be installed as closely as possible to walls, ceiling, columns, and other structures (consistent with the proper space for covering, removal of pipes, valve access, and other maintenance relationships) so as to occupy a minimum of space and all offsets, fittings, valves, and similar items required to accomplish this must be furnished by the Contractor without additional expense to the Owner. In case interferences develop, the Architect/Engineer shall decide which work is to be relocated regardless of which was first installed.
- B. Before submitting his proposal, the Contractor shall examine the architectural, electrical and mechanical drawings and, if any discrepancies occur between them and this



specification, he shall report same to the Architect/Engineer in writing prior to bidding and obtain written instructions for changes in the work.

- C. In case of a difference between the plans and specifications, or between specifications, the decision of the Architect/Engineer shall prevail.
- D. The Contractor shall keep a set of prints on which each he will mark line and grade and other changes made during installation. All changes shall be made through the Construction Manager with Architect/Engineer approval. At the end of the job, or when requested, he will make this information available to the Architect/Engineer for revision of the design drawings for records.

1.6 SITE AND JOB CONDITIONS - DIMENSIONS AND MEASUREMENTS

- A. Before submitting proposals, bidders shall visit premises, verify site conditions and conditions under which work under this contract must be conducted. Submission of proposal signifies that bidder has visited premises, has made said examinations and verifications and is fully conversant with all said conditions. No claims for additional compensation will be considered or paid, due to failure to be so informed.
- B. Before commencing work, examine all spaces, surfaces and areas indicated on drawings to receive work. Report necessary corrections in writing immediately to the Architect/Engineer. Do not proceed until corrections (if any required) have been made. Commencing work signifies acceptance of said spaces, surfaces, areas and of job conditions.
- C. Verify all dimensions shown on the drawings and obtain all measurements required for proper execution of work.
- D. Information pertaining to preliminary investigations, such as test borings, location of utilities, existing structures and existing grades appear on the drawings. While such data has been collected with reasonable care, there is no expressed or implied guarantee that conditions so indicated are entirely representative of those actually existing or that unforeseen developments may not occur. The interpretation of results of such investigation shall not be the responsibility of the Architect/Engineer. Where underground services, utilities, structures, buried tanks and other concealed items are located on the drawings or information is provided at the site, this data is based on available records, but not guaranteed to be complete or correct. They are merely given for assistance.

1.7 RIGGING; SUPPORTS AND FOUNDATIONS

- A. The respective Contractor shall furnish and be responsible for delivery into the premises and erection of any equipment furnished.
- B. Brackets, hangers, curbs, supports, and miscellaneous steel as required in connection with distributing piping loads and equipment supports shall be provided by the Contractor for equipment and piping which he installs. Note that each trade is responsible to install and utilize their own hangers and supports. It shall be the



contractors responsibility through the coordination process to establish acceptable means of supporting their systems and equipment.

- C. Contractor shall furnish and install all foundations and supports as may be necessary for the respective equipment manufacturer's recommended installation procedures, and shall be responsible for their locations and size whether or not shown on the drawings. Grout under floor mounted equipment bases, or block under roof or elevated steel platform mounted equipment bases, so that same are plumb and level.
- D. All fixtures, equipment and materials shall be supported and fastened in a manner satisfactory to the engineers. Ample backing shall be provided where plumbing fixtures, control panels or other items are supported on walls or partitions. Phillips, A & J, or Ramset anchors shall be used for block or tile walls. Toggle bolts shall be used only when other fastening systems are not suitable. Inserts shall be used wherever possible in concrete.

1.8 ELECTRICAL WORK

(See Electrical Section of Specification for additional details)

- A. This Contractor shall furnish all electrical devices requiring mechanical connections such as pressure switches, float switches, thermostatic switches, limit switches, solenoid valves, motor operated valves, other in-line items, and also including motors, unless otherwise indicated. Motors for all mechanical equipment shall be mounted by Mechanical Contractor. Provide magnetic motor starters where specified on packaged equipment.
- B. Equipment furnished shall comply with Electrical Specification Sections 16.140, Wiring Devices; Section 16.150, Motors; Section 16.155 Motor Starters; and other applicable sections. Motors where variable frequency drives are used shall be Corona Duty, suitable for VFD applications.

1.9 PIPE AND DUCT SLEEVES AND ESCUTCHEONS

- A. Provide sleeves for all piping and duct work passing through walls, floors, ceiling and partitions. Sleeves shall be 18 gauge galvanized sheet metal unless otherwise specified. Sleeves through boiler room or fire-rated areas roofs, walls, floors and foundation shall be standard weight steel pipe or cast iron pipe sleeves for piping or 1/8" plate and angle iron for ductwork unless otherwise specified. Pipes passing through walls below grade shall utilize Clow F1429 or U.S. Pipe mechanical joint wall sleeve where applicable, and be caulked watertight. Link-Seal bolted rubber materials may also be used to seal pipe to sleeve on cold piping where fire rating is not required.
- B. Sleeves shall be flush with walls unless otherwise indicated.
- C. Conceal all pipe sleeves with chrome plated escutcheons in finished areas. Use stainless steel escutcheons in food or pharmaceutical (FDA, USDA, 3A) processing rooms.



- D. In unfinished areas, sleeves shall project one (1) inch above finished floor line and be sealed watertight to the floor unless higher projection are indicated..
- E. Sleeves passing through walls or floors below grade above a finished floor line shall be made watertight with a plastic material as approved by the Architect/Engineer.
- F. All openings around duct and pipes and all sleeves where floors, fire rated walls and smoke barriers are penetrated shall be caulked smoke tight with 3M Fire Barrier CP-25, 3M Putty, and FS-195 Wrap/strip or approved equal by Hilti meeting U.L. System 91 and ASTM E-814 (UL-1479), installed per manufacturer's recommendations for horizontal and vertical penetrations. Fiberglass is not acceptable. Where vapor barriers must be continued on cold piping, they shall remain intact through the penetration and also sealed with 3M material per U.L. 91. **Note that UL rated assemblies are required. See Architectural Specifications Section 07.270 for additional requirements.**

1 .10 ACCESSIBILITY FOR REPLACEMENT; MAINTENANCE AND REPAIR

- A. The respective contractors shall provide access covers or doors for equipment which is concealed and must be serviced, operated or maintained. Equipment shall include, but not be limited to valves, traps, cleanouts, critical dampers, fire/smoke dampers, VAV boxes, control devices, filter, strainers, and related devices. Minor deviations from drawings may be made to allow for better accessibility, but major changes shall not be made without approval of the Architect/Engineer. VAV boxes, heat pumps, and other unitary devices with control boxes shall have approximately 3 ft of clearance for the control box so there is adequate access for maintenance. No piping, conduit, ductwork, etc. shall block the control box.
- B. Furnish and install Milcor, Babcock-Davis, Bilco, Cessco or American Hatch Corporation access panels of proper style to match adjacent finish and approved sizes. Locations shall be approved by the Architect/Engineer or as shown on the plans. Use stainless steel access panels in ceramic tiled walls. Access panels in fire walls or rated ceiling assemblies shall be UL labeled with a rating equal to that of the wall in which it is installed.
- C. Access panels shall be size large enough to allow proper maintenance of respective equipment for which they are installed.
- D. Access panels shall be provided by responsible trades, who shall then coordinate installation of the access panel with the effected trade.

1 .11 CUTTING AND PATCHING

- A. All cutting and patching shall be performed only by workmen skilled in the type of work involved.
- B. No structural members shall be cut without the consent of the Architect/Engineer and all such cutting, when authorized, shall be done in strict accordance with the instructions of the Architect/ Engineer. Where piping must pass through structural members and the Architect/Engineer has approved the burning of holes in such member, the



Contractor shall provide approved welded steel reinforcement of suitable dimensions adjacent to the hole to effectively offset the weakening effect of the hole upon the member.

- C. The size and location of roof and wall openings shall be the responsibility of the particular mechanical trade coordinated with other trades. Cracks and rough edges left following installation of equipment shall be caulked or covered with suitable escutcheons or framing by the Contractor.

1.12 EXCAVATION AND BACKFILL

A. General:

1. The respective contractors shall do all trench and pit excavation and backfilling required for his work inside and outside of the building, including all required shoring, bracing, pumping, and all protection for safety of persons and property. Materials to be excavated shall be non-classified and shall include all earth or other materials encountered.
2. Unless otherwise shown or specified, provide separate trenches for each utility. Lay all piping in open trench except when the Architect/Engineer gives written permission for tunneling.
3. The Contractor, in making or causing to be made any trench or excavation on public property or property to which the public has access, shall enclose, support and barricade his work, display warning devices, including red illumination at night and take all necessary precautions to protect the public at large from accidents while the excavation is open.
4. See Section 02.220 Excavating, Filling and Grading for additional requirements.

- B. Method of Excavation: All excavation shall be open cut from the surface, except in special cases as designated on the plans. All excavations for trenches, for sewer, water and other piping, and for associated appurtenances shall be made in such manner and to such depth and width as will give ample room for building the structures and for bracing, sheeting, and supporting of the sides of the excavation, for pumping and draining of groundwater and sewage which may be encountered, and for the removal from the trench of all materials excavated. Special care must be taken so that the soil below the bottom of the structure to be built shall be left undisturbed so that a firm bed will be provided for the structure.

C. Limits of Excavation and Subgrade Preparation:

1. Trenches for pipe shall be excavated so that there will be a minimum clearance of six (6) inches on each side of the barrel of the pipe, and a maximum width of trench at the level of the top of the pipe of not more than sixteen (16) inches greater than the O.D. of the pipe, for pipe thirty (30) inch I.D. or smaller. They shall be at all times of sufficient width to permit the pipe to be laid and to permit proper construction methods to be used.



2. Sufficient space shall be provided in the trench to permit the joint to be properly made. Joint holes may be provided in the excavation with overhanging sides, provided the material excavated is of such a nature as to make this procedure safe for the workmen. Bottom of trenches shall be evenly graded to insure uniform bearing for the length of the pipe except where joint holes are necessary. Excavate all rock, cemented gravel, old masonry or other hard material to a depth of at least four (4) inches below pipe bearing grade and fill with sand or fine gravel firmly compacted to 95% Modified Proctor.
- D. Amount of Opening: In excavating for sewers the excavation shall at all times be finished to the required grade for an adequate distance in advance of the completed sewer, but unless otherwise permitted by the Architect/Engineer, not more than one hundred (100) feet of trench shall be open at one time in advance of the sewer.
- E. Bracing and Sheeting: The Contractor shall furnish, put in place and maintain such sheeting, bracing and shoring as may be required to properly support the sides of any excavation and to prevent any movement of earth which could in any way injure the work under construction or other adjacent property or workmen. If the Architect/Engineer is of the opinion that at any point sufficient or proper supports have not been provided, he may order additional supports at the expense of the Contractor, but neither the placing of such additional supports by the order of the Architect/Engineer, nor the failure of the Architect/Engineer, to order such additional supports placed, shall release the contractor from his responsibility for the sufficiency of such supports and the integrity of the work. In the removing of sheeting and bracing after construction, special care shall be taken to prevent any caving of the sides of the excavation and injury to the completed work or to adjacent property. OSHA or MIOSHA (or corresponding agency in other states) requirements shall also be followed.
- F. Timber Left in Trench: no sheeting, bracing or other timber shall be left in the trench upon completion of the structure, without order of the Architect/Engineer. All timber must be removed as the backfilling of the trench goes forward unless otherwise ordered by the Architect/Engineer. The Contractor shall leave such sheeting, bracing or timber, as the Architect/Engineer orders in writing, for the purpose of preventing injury to the completed structure, adjacent structures, property or workmen. In no case shall ends of timber, sheeting, or bracing left in the trench be allowed to come nearer than two feet from the established finished grade.
- G. Disposal of Excavated Material: All suitable excavated material shall be used in backfilling over the sewer and appurtenances or distributed otherwise by the Contractor. All excavated material in excess of the quantity required for backfilling shall be hauled away by the Contractor and disposed of by dumping offsite. The Contractor shall provide all necessary labor and equipment for the spreading of all such excess material at the place of dumping and shall keep the dumping ground in neat condition satisfactory to the Architect/ Engineer.



- H. Extra Earth Excavation: In case soft material is encountered in the bottom of a trench or underneath a special structure, which is not indicated by soil boring data and which in the opinion of the Architect/Engineer is not suitable, the Architect/Engineer may order the removal of this soft material and its replacement with concrete or other material in order to make a suitable foundation for the construction of the sewer or structure. Any extra excavation made at the order of the Architect/Engineer will be paid for on the basis of the actual quantity of material excavated.
- I. Extra Sand Backfill: Any extra sand backfill made at the order of the Architect/Engineer will be paid on the basis of compacted volume in place. The sand furnished by the contractor for payment under this item, shall be natural sand free from organic matter, clay balls and stones having a diameter greater than one inch.
- J. Extra Sand Bedding: Any extra sand bedding made at the order of the Architect/Engineer will be paid for on the basis of the compacted volume, in place. The sand furnished by the contractor for payment under this item, shall be a natural sand free from organic matter, clay balls and stones having a diameter of greater than one inch. This item is intended to provide a sand as a bleeding material when unsuitable material is encountered below pipe grade.
- K. Concrete Work: All concrete work for monolithic concrete sewer construction, reinforced concrete pipe, manholes, catch basins, and all other concrete structures shall be made in accordance with the Standard Specifications for Highway Construction of the Michigan Department of Highways, latest edition, or corresponding specifications for the particular state in which the project is located.
- L. Backfill: Backfill trenches only after piping has been inspected, tested and locations of pipe and appurtenances have been recorded. Subsidence shall take place after backfilling. Backfill by hand around pipe with sand or fine gravel from the bottom of the pipe excavation to a level one (1) foot above the top of the pipe unless shown otherwise on the plans or as may be directed by the Architect/Engineer during the course of the work. Tamp firmly in layers not exceeding six (6) inches in thickness, taking care not to disturb the backfill, using equipment suitable for the kind of soil being compacted. Under floors, pavements, walks, and other surfacing, the backfill material shall be sand, back run gravel or limestone screenings compacted with a vibrating compactor for the full depth in layers not thicker than six (6) inches. Backfilling from above the pipe to the top of the trench excluding surface restoration for trenches located in, along, or within ten (10) feet of permanent pavements shall be backfilled with sand or fine gravel. This material shall be placed in thin layers and mechanically compacted with suitable equipment. This sand or gravel material shall be brought up to finish grade unless surface restoration has been shown. All backfilling shall be compacted to 95% Modified Proctor Density as established by the American Association of State Highway Officials. When laying pipe in impervious clay and backfilling with sand, the top two (2) feet of backfill shall be clay to seal the trench and reduce the possibility of water collecting in the trench. This must be done as soon as possible after laying the pipe.



- M. Surface Restoration: No basic surface restoration within the Owner's property will be necessary for the construction of the utilities except as per the backfilling specifications above. In particular, all topsoil shall be replaced and the area shall be left in a natural condition.
- N. Clean-up Limitation:
 - 1. The Contractor will be expected to maintain cleanup operations within a reasonable distance of the sewer being placed in the trench. Cleanup shall consist of leveling and backfill, removal of excess excavation and construction debris, and gravel repair of roads and driveways.
 - 2. If the Contractor does not maintain cleanup, as specified, the construction will be stopped until cleanup is carried out to the satisfaction of the Architect/Engineer.

1 .13 EXISTING SERVICES

- A. Where existing sewers, domestic and heating piping, gas, electric or other services are encountered, each affected Contractor shall take adequate steps to protect such services.
- B. If such existing services require relocation, make written request for ruling from the Architect/Engineer. Do not proceed on such portions of the work until written instructions are received. Costs involved shall be negotiated.
- C. Inactive services shall be plugged, capped or removed. Notify utility companies, municipal agencies having jurisdiction or Owner's Representative. Protect or remove as directed.
- D. Interruptions:
 - 1. Where existing services (e.g., water supply, fire protection, and sanitary sewers) must be interrupted for connections by this Contractor, such interruptions shall be scheduled a minimum of one (1) week in advance with Owner's Representative.
 - 2. Where line interruptions are required to make connection (e.g., steam and condensate), the Contractor shall make arrangements with the Owner's Representative to complete connection AFTER normal working or occupancy hours.

1 .14 BASIC MATERIALS AND METHODS - GENERAL

- A. All materials and equipment required for the work shall be new, of first class quality and shall be furnished, delivered, erected, connected and finished in every detail and shall be so selected and arranged as to fit properly in the building spaces. Where a specific kind or quality of material is not specified, a first class standard article as approved by the Architect/Engineer shall be furnished.



- B. Each Contractor shall furnish the services of one or more experienced superintendents who shall be in charge of the installation of his work together with all skilled workmen, fitters, plumbers, metal workers, electricians, welders, helpers, and laborers required to unload, transfer, erect, connect, adjust, start, operate and test each system.

1 .15 LUBRICATION

Upon completion of the work and before turning same over to the Owner, Contractor shall clean and lubricate bearings in pumps, air handling equipment and other rotating machinery, except sealed and permanently lubricated bearings. Use only lubricant recommended by the manufacturer.

1 .16 PAINTING

- A. All manufactured mechanical equipment shall be furnished with the manufacturer's standard shop finish unless specified otherwise in other sections of this specification.
- B. All equipment furnished and installed by this Contractor with a factory applied baked enamel finish shall not be painted, but any damaged spots shall be touched up to match.
- C. All prime and finish painting specified, except as noted above, shall be done by the Painting Contractor.

1 .17 EQUIPMENT AND SYSTEM IDENTIFICATION

- A. Contractor shall identify every system he installs after covering and/or finish painting. This also includes all piping and ductwork in equipment rooms, above ceilings, or exposed. Use Seton "OptiCode", Emed "Economark", Brady, or other approved equal legends, every twenty (20) feet on center, with flow arrows designating the particular service, utility, process or system. Where walls, flows or other surfaces are penetrated, identify on each side. Size of lettering and band color shall conform to ANSI A 13.1 and OSHA regulations, and are to be listed by Contractor and approved by Architect/ Engineer.
 - 1. Background field shall be the color scheduled below, and shall extend around the pipe and 2" beyond the wording and arrows in both directions.
 - 2. The word identifying the pipe shall be as scheduled below and of a color to contrast with the background field.
 - 3. On 2" or larger piping or covering, the letters shall be 2-1/2" high, length to suit, applied lengthwise. Piping or covering smaller than 2" shall be marked in a similar manner, but letters shall be 1-1/8" high. Lettering shall be positioned so that it is easily readable from the floor or ceiling access panel.



4. System Color Coding and Wording:

System	Wording	Background Color
Boiler Feed Water	BOILER WATER	Green
Chemical Waste	WASTE	Yellow
Chemical Vent	VENT	Yellow
Cold City Water	CITY WATER	Green
Compressed Air	COMPRESSED AIR	Yellow
Compressed Air - 15 psi	LOW PRESSURE AIR	Green
Compressed Air - 85 psi	HIGH PRESSURE AIR	Green
Condensate	CONDENSATE	Yellow
Domestic Cold Water	DOMESTIC COLD WATER	Green
Domestic Hot Water	DOMESTIC HOT WATER	Yellow
Fire Protection	FIRE PROTECTION WATER	Red
Heating Water Supply	HEATING SUPPLY	Yellow
Heating Water Return	HEATING RETURN	Yellow
Natural Gas	NATURAL GAS	Yellow
Sanitary Vent	SANITARY (or PLBG) VENT	Yellow
Sanitary (Domestic) Drain	SANITARY DRAIN (or SEWER)	Yellow
Soft Water	SOFT WATER	Green
Steam	STEAM	Yellow
Storm Water	STORM WATER (or STORM SEWER)	Green
Vacuum	VACUUM	Green
Other piping systems, which may occur and are not listed above, shall be worded and colored as instructed by the Owner's Representative.		

- B. Provide for the identification of all equipment where the use is not obvious. This will include but is not limited to fans, heating and ventilating units, condensing units, starters, switches, panels, and isolated pumps. Identification must be coordinated to provide a quick means of identifying the interrelationship between mechanical and electrical equipment and the area served by the equipment.
- C. Label all pumps, fans, air handlers, chillers and other mechanical equipment with elamicaid nameplates, white (engraved) on black, one (1) inch high letters. Label all tanks, agitators, heat exchangers, boilers, deaerators, water conditioning equipment, and other process equipment with epoxy painted or vinyl stick on labels. Letters shall be four inches (4") of larger so as to be easily visible from normal operating distance.
- D. In addition to the above labels on equipment, where equipment items are mounted above ceilings, provide plastic label stuck on ceiling grid to identify the location of such equipment items with the respective equipment number. Label should be no wider than the ceiling grid with the identification wording running parallel to the grid piece upon which it is attached. This includes VAV boxes, reheat coils, coil modules, air handling units, fan coils, hidden cabinet heaters, fire/smoke dampers, and similar equipment that will need routine maintenance.



- E. Label all instruments having a tag number with elamicold nameplates, white (engraved) on black, 1/4" high letters. An alternative is to label with stainless steel tags attached to the instruments with stainless steel wire.
- F. Valve Tagging:
 - 1. All valves shall be tagged with 2"x 3" plastic engraved tags bearing the valve identification number. Valve tags shall be as made by Seton "Setonply", Brady, or other approved equal. Use stainless steel tags in food or pharmaceutical (FDA, USDA, 3A) processing rooms. The Contractor shall furnish a typewritten chart indicating the fixtures or areas supplied by each numbered valve and shall mount same in a frame, under glass, as directed in the field by the Owner's Representative.
 - 2. Valve numbers shall be prefixed with an "S" for steam, "O" for Oxygen, "W" for water, and in similar manner for other services.
 - 3. Tags shall be an appropriate background color, same as pipe labeling, for the respective service.
- G. Volume Damper Tagging: All volume dampers shall be tagged with a #8 (6-1/4" x 3-1/8") blank manilla paper tag with metal eyelet, attached by a wire tie or solid wire. Intent is that insulation contractor perform this work with assistance and coordination from the sheet metal contractor.

1 .18 GUARANTEE

Each Contractor shall guarantee his installation for a period of one (1) year from the date of final acceptance against all defects in material and/or workmanship and ordinary wear and tear. He shall make any and all adjustments to the system and minor alterations as required to place the system in satisfactory operating condition at no extra cost to the Owner. All commissioning checklists are required to be completed with outstanding issues resolved before equipment and/or systems are turned over to the Owner.

1 .19 EQUIPMENT FURNISHED BY THIS CONTRACTOR

- A. The intent of these specifications is to allow the manufacturer's standard design and construction where suitable. The equipment should have the basic quality, however, as specified. See specific equipment sections for additional requirements.
- B. All manufacturers offering equipment for this project shall furnish to the Architect/Engineer complete information describing the design performance, equipment experience, and other pertinent information necessary for review. In addition, the location of the manufacturer's Service Engineer who will be responsible for servicing the equipment furnished shall be provided. Additional information may be required by the Architect/Engineer after submittal.



- C. Prices shown in the proposal for alternative equipment shall include all structural, mechanical or electrical changes from that shown on the plans which will be required for the installation of the alternate equipment. The plans and specifications have been prepared on the basis of equipment manufactured by those firms listed in the drawing schedules and specifications. All equipment listed in the proposal will be considered carefully on the basis of advantages, disadvantages, and economics.
- D. The Contractor shall guarantee all equipment installed for one (1) year from the date of acceptance by the Owner's Representative. If prior to the duration of one year, any equipment or parts thereof are found to be defective, the Contractor shall replace the part at no cost.
- E. Manufacturer's Services:
 - 1. All equipment shall be given one (1) coat of shop prime, unless otherwise indicated.
 - 2. Lubrication facilities shall be located for convenient servicing. Lubrication, maintenance instructions and one (1) year supply of recommended lubricant, properly labeled, shall be furnished with all equipment.
 - 3. Any special tools, including special grease guns, required for maintenance or adjustment of the equipment shall be furnished with the equipment.
 - 4. Upon completion of the installation of the equipment or before initial operation, three (3) bound sets of complete operating and lubricating instructions for all equipment shall be furnished to the Owner by the Contractor. Included with the operating instructions shall be a complete set of all equipment drawings including shop drawings, repair instructions, complete parts list, lubrication instructions and recommended lists of lubricants.

1.20 SHOP DRAWINGS

- A. Contractor shall provide seven (7) sets of shop drawings in accordance with the front end portion of this specification for all equipment provided by this Contractor.
- B. Shop Drawings shall provide complete details of the material or equipment they describe including dimensions, gauges of materials, weights, finishes, motor horsepower, voltage, current, starting characteristics, operating characteristics, building location room number, capacities, rough-in connections, installation requirements, and complete internal and external wiring diagrams showing all connections, along with fan and pump curves where applicable.
- C. Contractor is responsible for checking and marking shop drawings for compliance with contract documents prior to submitting them to the Architect-Engineer for his review.



- D. In particular, shop drawings on the following equipment items shall be furnished within 15 working days from work of contract to maintain Proposal Schedule.
1. Roof or Floor Mounted Equipment affecting Building Structure (e.g. air handling units, exhaust fans, ventilators).
 2. Floor, wall, or beam column mounted equipment requiring special foundations or supports (e.g.. boilers, drainage equipment, tanks, etc.).

1 .21 TEMPORARY HEAT

Use of permanent equipment for temporary heating shall be only as allowed by the General Requirements section of these specifications. The Architect-Engineer does not recommend the use of permanent equipment for temporary heating. Any damage done to building systems or required repair or cleaning resulting from their use in temporary heating shall be the responsibility of the contractors or construction managers involved.

- A. If portions of systems are used for temporary heating, all openings on the return/fresh air side of the air handling systems shall be covered with MER 8 filter media with dust retention and anti-microbial capability, as made by Fiberbond, "Dual-Ply Dustlok Media", or approved equal. Filter media shall be replaced as necessary to maintain its functional integrity.

1 .22 SAFETY

- A. Contractor shall be responsible for job site safety.
- B. Contractor shall be comply with OSHA regulations for confined space entry locations.



1 GENERAL

1.1 DESCRIPTION

- A. Work included: Insulation required for this work includes, but is not necessarily limited to the following:
 - 1. Piping and In-Line Equipment:
 - a. Domestic hot and cold water above ground.
 - b. Hot water heating.
 - c. Steam and condensate piping.
- B. Related Work Described Elsewhere:
 - 1. Section 15.400: Plumbing

1.2 QUALITY ASSURANCE

Qualifications of Installers:

- A. For the actual installation and testing of work under this section, use only thoroughly trained and experienced workmen completely familiar with the items required and the manufacturer's current recommended methods of installation.
- B. In acceptance or rejection of the finished installation, no allowance will be made for lack of skill on the part of installers.

1.3 SUBMITTALS

- A. Materials List: Within 15 days after award of Contract, and before any of the materials of this section are delivered to the job site, submit complete materials list to the Architect/Engineer in accordance with the provisions of Section 01.300 of these specifications. The list shall identify all materials and equipment proposed to be furnished and installed under this portion of the work, giving manufacturer's name, catalog number, and catalog cut for each item where applicable. Submittals shall include a description of insulation materials, heat transfer data, thicknesses, jackets, adhesives, and methods of application on pipe, duct, fittings and surfaces.
- B. Manufacturer's Recommendations: Accompanying the materials list, submit the manufacturer's current recommended method of installation for the insulation required in this work.
- C. Samples: Contractor shall submit two sets of samples of ductwork insulation required in this work including jackets.



1.4 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect the materials of this section before, during, and after installation and to protect the installed work and materials of all other trades.
- B. Replacement: In the event of damage by this Contractor, immediately make all repairs and replacements necessary to the approval of the Architect/Engineer and at no additional cost to the Owner.

2 PRODUCTS

2.1 GENERAL REQUIREMENTS

- A. All insulation, unless otherwise indicated, shall have composite (insulation, jacket and adhesive used to adhere the jacket to the insulation) Fire and Smoke Hazard ratings as tested under procedure ASTM E-84, NFPA 255 and UL 723, not exceeding:

Flame Spread	25
Smoke Developed	50
Fuel Contributed	50

Accessories, such as adhesives, mastics, cements and cloth to fittings shall have the same component ratings as listed above. Paper laminate jackets shall be permanently fire and smoke resistant. Chemicals used for treating paper in jacket laminates shall not be water soluble and shall be unaffected by water and humidity. The insulation contractor shall verify in writing, prior to installation, that all products to be used meet the above criteria.

- B. Contractor shall provide all adhesives, mastics mechanical fasteners, etc., as specified herein and as required. Adhesives, equal to those specified, shall be provided and applied in accordance with manufacturer’s published recommendations, and shall be as manufactured by Dow Corning, Foster Products, Johns Manville (effective May 5, 1997), Owens Corning, or approved equal.
- C. Preformed insulated fittings and jackets shall be as made by Proto PVC Corporation or Johns Manville. PVC covers such as Proto or Zeston, may be used throughout the piping systems, and where they meet the above 25/50 flame and smoke ratings, may be used in schools or hospitals where allowed by the State Fire Marshal.
- D. NFPA 90-A and NAIMA standards shall be met as applicable.



2.2 PIPING INSULATION

A. Plumbing and Hydronic Systems

1. Pipe Insulation: Preformed fiberglass pipe insulation manufactured in accordance with ASTM C-547, with a 'K' factor of 0.23 Btu-in/hr-sf/Deg°F @ 75°F mean temperature, shall have a pre-applied all service jacket. A vapor barrier shall be maintained on cold piping by sealing all staples and raw insulation ends and fittings. Insulation shall be as made by Johns Manville Micro-Lok 850-AP or AP-T, or equal by Owens-Corning, Knauf, Certain-Teed or Manson Insulation.
2. Fittings, Valves, Flanges, Strainers, Flexible Connectors, Suction Diffusers, Unions, etc.:
 - a. Hot Piping: Fittings shall be insulated by applying factory precut insulation inserts to the fitting per Manville Hi-Lo Temp insulation insert recommendations and covered with 25/50 PVC covers. Other piping components shall be insulated with approved insulating cement of thickness equal to adjoining pipe insulation, with glass fabric cover adhered and finished with fire resistive lagging adhesive. Contractor may also insulate with mitered segments of fiberglass pipe insulation, secured with No. 20 gauge galvanized steel wire, and finished with smoothing coat of insulating cement and glass fabric, as above. Cover all sizes with applicable pre-molded PVC insulation fittings, as made by Proto PVC Corporation and Johns Manville. Wrap other areas not suitable for pre-molded PVC fittings with fiberglass cloth and insulating mastic.
 - b. Cold Piping: Insulate same as hot piping but maintain continuous vapor barrier with mastic, including sealing all staples and raw insulation ends at fittings. Where applicable, use Klo-Shure or approved equal supports at pipe hangers or support locations to maintain integrity of insulation vapor barrier.
3. Jackets:
 - a. All exposed insulated piping passing through finished areas, within 10 feet of floor in Boiler House, and exterior piping shall be covered with 0.020" PVC jacket equal to Ceelco Ceel-Tite PVC 320 UVR Series or equal by Proto PVC Corp. Washdown areas, and exterior piping shall be sealed vapor and water tight.



B. Thickness Schedule:

	Pipe Size	Thickness
Domestic hot and cold water, recirculating water, and make up water.	Thru 1-1/4" 1-1/2" and larger	1/2" 1"
Hot Water Heating (Insulate radiant floor piping up to slab)	thru 1.1/2" 2" and over	1" 1.1/2"
Steam Piping:		
15 psig	Pipe thru 2" 2" & over	1.1/2" 2"
Boiler Feed and Condensate Piping	thru 1" 1.1/4" – 2" 2-1/2" & over	1" 1.1/2" 2"
Note: Where pipe chase dimensions or interference problems make use of the specified thickness impossible, local reductions in thickness may be made with Architect/Engineer approval		

2.3 OTHER MATERIALS

All other materials, not specifically described, but required for a complete and proper installation of the work of this section, shall be new, first quality of their respective kinds, and subject to approval of the Architect/Engineer.

3 EXECUTION

3.1 SURFACE CONDITIONS

A. Inspection:

1. Prior to all work of this section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
2. Verify that all the work of this section may be installed in accordance with all pertinent codes and regulation, the original design, and the approved shop drawings.

B. Discrepancies:

1. In the event of discrepancy, immediately notify the Architect/Engineer.
2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.



3.2 INSTALLATION

A. General:

1. Contractor shall be responsible for examination and acceptance of all surfaces and conditions prior to delivery and installation.
2. Install all insulation in strict accordance with the respective manufacturers' recommendations as approved by the Architect/Engineer.
3. Insulation shall be applied on clean, dry surfaces and after inspection and release for insulation application. All insulation shall be continuous through wall and ceiling openings and sleeve. Pipe insulation shall be continuous through pipe hangers. All joints shall be butted firmly together. Longitudinal jacket laps and butt strips shall be smoothly secured according to manufacturer's recommendations.
4. When covering is terminated at equipment, specialties, or access doors; or where jackets are pierced by metal parts such as thermometers or pressure gauges, covering material shall be neatly tapered and jacket securely sealed to pipe or other metal part.

B. Piping Insulation Installation:

1. Piping insulation shall be installed with all joints tightly butted; with overlapping longitudinal joints integral with jacket, and with 3" wide separate butt strips; tightly sealed with adhesive. Exposed insulated piping shall be provided with a finish suitable for a final coat of paint, unless it has a PVC or aluminum jacket specified above. Concealed insulation will not be painted nor will aluminum jacketed pipe.
2. Insulation covering on heated piping shall be neatly trimmed where penetrated by support shoes where slides are used or support inserts where rollers are used.
3. Insulation on all cold surfaces where vapor barrier jackets are used must be applied with a continuous unbroken vapor seal. Install the vapor barrier jacket between insulation inserts and shields to maintain the continuous vapor seal. Supports, anchors and guides that are secured directly to cold surfaces must be adequately insulated and vapor sealed to prevent condensation. Stapling of vapor barrier jackets on cold piping will be permitted only if the staples are sealed within approved vapor barrier mastic or vapor barrier tape.
4. **Rigid insulation inserts in conjunction with oversized hangers shall be installed for all cold piping, all exterior piping, and other piping requiring a vapor seal.** Inserts shall consist of Johns Manville Thermo-12 or Calsilite rigid pipe insulation. The inserts shall be of thickness equal to the adjoining insulation and shall be provided with vapor barrier where required. Inserts shall be of sufficient density to avoid crushing of insulation and damage to vapor barrier. Insulation inserts shall not be less than the following lengths, unless otherwise specified:



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PATTENGILL DEMOLITION-MECHANICAL MODIFICATION
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1/2" to 2-1/2" pipe size	10" long
3" to 6" pipe size	12" long
8" to 10" pipe size	16" long
12" and over	22" long

5. Galvanized metal protection shields equal to Anvil Fig. 167 or equivalent by "Buckaroos" shall be applied between oversized hangers or supports and the pipe insulation inserts. Shields shall be formed to fit the insulation and the length specified for the hanger inserts less 4 " to allow for vapor sealing butt joints in each side of the shields. On piping 6 inches and above pipe covering protection saddles equal to Anvil Figures 160 through 165 shall be used for hot piping.
 6. Coordinate with the piping Contractor(s) to get the insulation inserts and shields in time for installing the pipe.
 7. Specified adhesives, mastics and coatings shall be applied at the manufacturer's recommended minimum coverage per gallon.
 8. Where metal jackets are used, installation on pipe, fittings, valves, flanges, and other piping accessories shall conform to Pabco recommendations.
 9. Install Armaflex or Manville Aerotube per manufacturer's recommendation.
- C. Hot Equipment Insulation Installation: Cut, score, or miter insulation to fit contour of equipment and secure with 3/4" x .020" galvanized steel bands or 16 gauge galvanized wire on 12" centers. Weld pins or stick clips with washers, may be used for flat surfaces and spaced 18" apart. Stagger joints where possible and fill voids with insulating cement. Apply 1" galvanized hexagonal wire mesh over entire surface of equipment, and apply a coat of insulating cement to smooth out surface. When cement is dry, apply a coating of fire retardant lagging adhesive. Embed a layer of open weave glass cloth overlapping all seams 2", and finish with a second coat of the same adhesive.
- D. Install cold equipment insulation on clean surfaces using manufacturer's recommended adhesives, joining requirements, and finishing coating.

3.3 TESTS

- A. Insulation shall not be completely installed until pressure/leak tests of piping and ductwork systems have been completed. Straight lengths of pipe may be installed before pressure testing. Verify with ductwork contractor that ductwork integrity has been verified prior to insulating ductwork.
- B. The insulation contractor shall perform a final inspection and correct all damaged insulation prior to "above ceiling" inspections scheduled by the general contractor or construction manager. This shall be done to identify any areas damaged by other trades during construction.

1 GENERAL

1.1 WORK INCLUDED

- A. The plumbing work includes, but is not necessarily limited to:
 - 1. Work summarized in Section 15.000, Scope of Work. Piping, valve, and equipment identification.
 - 2. Piping cleaning and pressure testing.
 - 3. All required permits and approvals, including any local utility service and inspection charges, meter charges, and all necessary installation requirements, testing, and adjustments to systems needed to satisfy state and local codes. All plumbing fixtures and related equipment being installed must have the prior approval of the authority having jurisdiction.
 - 4. Testing to verify compliance with lead regulatory requirements in completed domestic water systems. Note that components used in drinking water systems shall meet NSF Standard 61, particularly Section 9.
- B. Related Work Described Elsewhere:
 - 1. Section 15.000: Scope of Work
 - 2. Section 15.010: General Provisions
 - 3. Section 15.250: Insulation

1.2 QUALITY ASSURANCE

- A. Qualifications of Workmen: Use a sufficient number of journeyman plumbers and competent supervisors in the execution of this portion of the Work to ensure proper and adequate installation of plumbing throughout, inside building.
- B. Compliance with Specifications:
 - 1. Whenever required during progress of the work and after completion of construction, immediately furnish proof acceptable to the A/E that all items of plumbing installed equal or exceed all requirements specified for this work.
 - 2. In the event such proof is not available, or is not acceptable to the A/E, the A/E may require the Contractor to remove the item or items and replace with material meeting the specified requirements and to repair all damage caused in the removal and replacement, all at no additional cost to the Owner.
- C. Codes and Standards: Comply with all Michigan Construction Code and local requirements.



1.3 SUBMITTALS

- A. Shop Drawings: Within 15 working days after award of contract, and before any plumbing materials are delivered to the job site, submit shop drawings in accordance with the provisions of Section 01.300 of these specifications, showing all the plumbing system and plumbing materials, products, and vibration isolators and flexible connectors proposed to be furnished and installed.
- B. As-Built Drawings: During progress of the work, maintain an accurate record of all changes made in the plumbing installation from the layout and materials shown on the approved shop drawings. The location of shutoff valves for the various services and proper identification of services must be shown.

1.4 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect plumbing materials before, during, and after installation and to protect the installed work and materials of all other trades.
- B. Replacements: In the event of damage caused by this contractor, immediately make all repairs and replacements necessary to the approval of the Architect/Engineer and at no additional cost to the Owner.

1.5 EXISTING CONDITIONS

See Section 15.010 paragraph 5.00 for requirements relevant to existing conditions.

2 PRODUCTS

2.1 PIPE

- A. Storm Drainage: The following piping materials are approved for this project. The contractor may choose to use one piping material or combination there of to provide a complete working drainage system that meets all applicable local and national codes.
 - 1. Cast Iron Storm Drain pipe:
 - a. From roof drains to 5 feet outside building structure, storm piping shall be standard weight cast iron soil pipe and fittings conforming to the requirements of CISPI (Cast Iron Soil Pipe Institute) Standard 301, ASTM A 888 or ASTM A 74 for all pipe and fittings. Pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute or receive prior approval of the engineer.
 - b. Provide proper connection materials required for the connection to the exterior storm pipe service (Hancor, Cast iron, PVC, etc.), whatever the case may be. When connecting new piping between existing storm piping, field verify the condition and type of piping. Replace all damaged piping within general connection area. Provide appropriate "Fernco" coupling or engineer approved system between different pipe materials (i.e. PVC pipe connected to clay or concrete piping, or cast iron connected to plastic pipe system). Hubless coupling gaskets shall conform to ASTM standard C564.



- c. **NOTE:** "Husky" or "Fernco" no-hub clamps shall be used on all cast iron storm water piping above grade. At connections between PVC and Cast Iron, use "Husky" or "Fernco" couplings.
 - d. When connecting new storm drainage piping between existing storm piping, field verify condition and type of piping. Replace all damaged piping within general connection area. Provide appropriate "Fernco" coupling or engineer approved system between different pipe materials (i.e. PVC pipe connected to clay or concrete piping, or cast iron connected to plastic pipe system). Hubless coupling gaskets shall conform to ASTM standard C564.
2. Exterior Storm Drain Pipe (If existing pipe is damaged):
 - a. Schedule 40 PVC ASTM D2665 solvent welded.
 - b. SDR 35 ASTM 3034 PVC with neoprene gasket.
 - c. Reinforced concrete pipe meeting ASTM C76 class III.
 - d. Standard weight cast iron soil pipe and fittings meeting ASTM C56Y. Less than 6" pipe use standard weight cast iron soil pipe and fittings conforming to the requirements of CISPI (Cast Iron Soil Pipe Institute) Standard 301, ASTM A 888 or ASTM A 74 for all pipe and fittings. Or use Schedule 40 PVC ASTM D2265. For 6" pipe and over use ASTM 3034 PVC, "O" ring push on joint.
 3. Combination Cast Iron/Schedule 40 CPVC Sanitary Drain Pipe:
 - a. Domestic waste, vent, and piping shall be standard weight cast iron piping or no-hub pipe conforming to the requirements of CISPI (Cast Iron Soil Pipe Institute) Standard 301, ASTM A 888 or ASTM A 74 for all pipe and fittings. Pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute or receive prior approval of the engineer.
 - b. An approved option to the cast iron sanitary drainage system for discharge of sump pumps is Schedule 40 CPVC ASTM F-441 solvent-welded plastic pipe and fittings.
 - c. At no time will "Foam Core" type PVC piping be allowed for sanitary piping. This type of piping is allowed only for vent piping.
 - d. Provide proper connection materials required for the connection to the exterior sanitary service (Hancor, Cast iron, PVC, etc.), whatever the case may be. Use approved couplings or gaskets for connections between cast iron and PVC. At no time will threaded PVC adapters be used.
 - e. When connecting new sanitary drainage piping to existing sanitary piping, field verify condition and type of pipe. Replace all damaged pipe within general connection area. Provide appropriate "Fernco" coupling or engineer approved connecting adapter/system between different pipe materials (i.e. PVC pipe connected to clay or concrete piping, or cast iron connected to plastic pipe system).

4. Exterior Sanitary Drain Pipe: Exterior sanitary drainage piping shall be Schedule 40 PVC ASTM D2665 solvent welded plastic pipe and fittings through 4" size. Above 4", contractor may use same ASTM 3034 PVC with push-on rubber joints equal to J-M Ring-Tile PVC gravity sewer pipe and fittings, suitable for depth of bury and soil and compaction conditions.
 5. Cast iron sanitary pipe must be used at least 10 feet away from any drain used for boiler blowdown, condensate receiver drains, boiler or water heater drainage or hot water relief.
 6. Lift Pump Discharge Piping: Piping from sump pumps in the Boiler House shall be solvent welded Schedule 40 CPVC ASTM F-441 with true-union solvent weld CPVC ball valves and non-slam check valves.
- B. Potable Water Piping (Hot, Cold, and Re-circulation):
1. Site water piping from underground to inside the building one foot above finished floor (or inside wall with basement rooms) shall be:
 - a. Ductile iron, mechanical joint with retainer gland equal to Clow F-1058 meeting ANSI A21.11 Class 52. Fittings shall be 250 lb. mechanical joint anchoring fittings meeting ANSI A21.1 with ANSI A21.11 gaskets. Pipe and fittings shall be cement mortar lined meeting ANSI A21.4 and be coated with a bituminous coating of either coal tar or asphalt base one mil thick.
 2. Potable water piping aboveground:
 - a. Potable water piping aboveground through 3" shall be hard drawn copper tube Type L meeting ASTM B-88 with wrought or forged copper fittings and 95-5 tin-antimony or other suitable lead-free solder. Potable water piping above 3 inch shall also be copper as specified above. **No galvanized** piping allowed.
 - b. In lieu of all soldered copper system, contractor may use the following:
 - (1) Potable water piping 2 inches and above shall be hard drawn copper tube Type L meeting ASTM B-88, using roll grooved Victaulic CTS with Style 606 rigid joints or equivalent by Grinnel Gruvlok. Grooved fittings and couplings shall be manufactured to copper tube dimensions, and supplied with Grade EPDM Flush Seal type gaskets. Gasket shall be UL classified in accordance with ANSI/NSF-61 for Potable Water Service, and manufactured by the coupling manufacturer.
 - (2) Potable water piping (Type L ASTM B-88 hard drawn copper) shall be assembled using the Pro-Press system by VIEGA/RIDGID using copper or bronze press fittings, installed per manufacturer's recommendations may be used in sizes ½ inch through 4 inch pipe.



- c. If grooved pipe is used, only one manufacturer shall be used per Bid Division and the manufacturer's representative shall conduct on-site training of field personnel and visit the project during construction and review for proper installation of their product. Grooving tools shall be of the same manufacturer as the grooved components.
 - d. Exposed hot, cold, and drain water piping in kitchens shall be chrome "plated" copper, un-insulated, meeting local health department requirements. This may be achieved by use of Chrome Plate Chrome Finish enamel by DAP #193 applied using manufacturer's recommendations. Where piping is cold enough to sweat, it shall be insulated and covered with 0.020 Ceelco PVC jacket, sealed wash down tight. Refer to specification section 15.250 for more information.
 - e. For locations where domestic water piping is routed below the floor slab or is embedded in concrete (to trap primers, island fixtures, or remote kitchen equipment), the following piping is an acceptable alternate piping method in lieu of copper tubing. Kitec XPA piping (Pex-Al-Pex, otherwise known as IPEX) in sizes 1/2" thru 1" is allowed. Piping shall be manufactured to ASTM F876, F877, and CSA B137.5 as well as NSF listing for potable water. Crimp style fittings and/or Compression style fittings shall be manufactured to ASTM F1974, CSA certified to CSA B137.9 and B137.10 and NSF listing. PEX piping is NSF listed and manufactured to ASTM standards is also acceptable for this type of application. No joints allowed under floor, in slab or in wall. All transition points between different piping materials shall be made at an accessible location.
- C. Compressed Air Piping:
1. Pipe through 2" shall be hard drawn copper tube Type K ASTM B88 with wrought or forged copper fittings and 95-5 solder. On main air supply piping; install 1" threaded tees with ball valve in vertical direction, every pipe length (approx. 21 ft) instead of couplings.
 2. Piping over 2 inch shall be ASTM A-53 Schedule 40 welded with A234 welding fittings.
 3. Compressor air intake piping shall be Schedule 40 PVC.
- D. Steam: Pipe 2" and less shall be black seamless steel, Schedule 40 threaded and coupled, meeting ASTM A106. Fittings shall be 125 lb. standard cast iron screwed fittings meeting ANSI B16.4. Pipe over 2" shall be black steel, Schedule 40, plain end, meeting ASTM A53. Fittings shall be standard weight welded fittings meeting ANSI B16.9 and ASTM A234. Flanges shall be 150 lb. slip-on or welding neck meeting ANSI B16.5 and ASTM A181-1.
- E. Steam Condensate: Piping 2" and less shall be black seamless steel, Schedule 80 ASTM A106 or A-53 with 125 lb standard cast iron screwed fittings meeting ANSI B16.4. Pipe over 2" shall be A106 or A-53 Schedule 80, plain end, with extra heavy weight welding fittings meeting ANSI B16.9 and ASTM A234 with 150 lb. welded flanges.



2.2 VALVES (POTABLE WATER, AIR, AND GAS SERVICE)

All gate, globe, and check valves shall be by Apollo, Milwaukee, Nibco, Hammond, Watts, or Stockham as listed below. Ball valves, plug valves, and butterfly valves shall be as listed below or approved equal. Shutoff valves for all general service purposes shall be ball valves, not gate valves.

TYPE	SIZE RANGE	VALVE NUMBER				
		Milwaukee	Stockham/ Apollo	Nibco	Hammond	Watts
Gate (screwed)	2" and below	1151	B120	T134	IB629	B3100
Gate (sweat)	2" and below	1169	B124	S134	IB648	B3111
Gate (flanged)	Above 2"	F-2885A	G623	F617-O	IR1140	F503
Globe (screwed)	2" and below	590T	B-22T	T234-Y	IB413T	B4010-T
Globe (sweat)	2" and below	1590T	B-24T	S235-Y	IB423	B4011-T
Globe (flanged)	Above 2"	F-2981A	G-512	S718-B	IR116	F501
Swing Check (screwed)	2" and below	510T	B-322T	T433-Y	IB946	B5300-T
Swing Check (sweat)	2" and below	1510T		S433-Y	IB945	B5301-T
Swing Check (flanged)	Above 2"	F-2974A	G-931	F918-B	IR1124	F511
Ball Valve (threaded)	2" and below	BA-100	Apollo 70-100	T-585-70	8501	B6000
Ball Valve (sweat)	2" and below	BA-150	Apollo 70-200	S-585-70	8511	B6001
Butterfly Valve (flanged)	Above 2"	Full lug, SS Shaft, Al-Bronze disc, EPDM seat, 250# dead-end shutoff / bi-directional; Keystone 222-784, Apollo 143, Milwaukee HL series, or Nibco LD3010. Valves 8" and above shall have gear operators.				
Butterfly Valve (grooved steel pipe)	Above 2"	PPS coated CI or nylon coated DI body, EPDM encapsulated disc, extended neck, 300 psig; Victaulic Vic-300, Anvil Gruvlok 7700.				
Butterfly Valve (grooved copper pipe)	Above 2"	Bronze body, EPDM encapsulated disc, extended neck, 300 psig; Victaulic Series 608, or equivalent by Anvil Gruvlok.				

AGA (IAS) rated ball valves shall be used on gas service through 2" size.

Valves used in potable water service shall not be capable of placing any dissolved lead into the potable water stream.

2.3 PIPE SLEEVES AND ESCUTCHEONS

Provide sleeves for all plumbing passing through walls, floors, ceilings and partitions. Sleeves shall be 18 ga.-galvanized sheet metal. Pipes passing through walls below grade shall utilize Clow or equal U.S. Pipe mechanical joint wall sleeve where applicable. Sleeves shall be caulked watertight with waterproof mastic or applicable silicone sealant. Conceal all pipe sleeves with chrome-plated escutcheons in finished areas.



- A. Link-Seal bolted rubber materials may also be used to seal pipe to sleeve on piping where fire rating is not required.
- B. In lieu of the cast iron wall sleeve indicated above, Century-Line® sleeves engineered to mate with Link-Seal® modular seals may be used as manufactured by PSI-Thunderline/Link-Seal®, selected and installed per manufacturer's recommendations. In particular these should be applied when non-metallic piping is used, with the sleeve and seal material selected to be compatible with the piping. Maintain fire ratings where required.

2.4 HANGERS, ANCHORS, AND SUPPORT (NON-CORROSIVE AREAS)

- A. Hangers on copper pipe shall be Anvil Fig. CT-65 copper plated light weight clevis, or equal by Fee and Mason or Berger. Rods shall be 3/8" diameter meeting ASTM A 575. Maximum spacing shall be 6 feet for pipe 1-1/4" and smaller, 9 feet for pipe to 2" and 1/2" dia. rods with 12 foot spacing through 3". Hangers on steel pipe shall be clevis type, Fee and Mason Fig 239 or Anvil No 260. Where rollers are used, they shall be Anvil Fig 181 with 160 to 164 Series protection saddles sized to accommodate insulation. **Oversized pipe hangers** shall be installed to accommodate the installation of the insulation and allow the insulation to pass through the hanger with out cutting or piecing. Install pipe shields indicated in Insulation Specification section 15.250 to protect insulation and vapor barrier.
- B. Hangers and supports shall be suitable for size and type of pipe to be supported.
- C. Piping 2" and smaller may be supported with hook plates wherever it runs adjacent to a sidewall. Piping 2-1/2" and larger shall be supported by a wall bracket and either a clevis or roller type hanger. Roller hangers shall be used where piping temperature normally exceeds 140°F. No piping may be supported from the roof deck, unless otherwise indicated. Pipe near floor may be supported on base support with pipe stanchion and flange resting on 4" high concrete pad.
- D. No piping shall be hung from the piping of other trades or systems. Hangers shall be same material as the piping such that neither the hanger nor suspended piping is subject to electrolytic decay.
- E. Drainage piping support shall meet requirements of respective pipe manufacturer and local codes.
- F. Locate hanger supports and accessories to support pipe, lines, valves, joints, and additional concentrated loads. They shall not restrict free thermal expansion unless otherwise shown. Hangers shall not be hung from structural steel or intermediate members or cross bracing in a manner that may contribute to unnatural deflection and potential failure of the member, e.g. lateral load from cross brace in compression could yield to cross brace failure and risk of damage to main structure.
- G. Exterior pipe hangers shall be galvanized.
- H. Piping routed over roofs shall be supported as shown on the plans or if not shown, supported in a manner that protects the roofing system, using prefab supports equal to Erico Pipe Pier.



- I. The following is a schedule of maximum spacing for hangers and supports and size of suspension rods for all steel piping, unless otherwise indicated or required. (Rods shall meet ASTM A 575).

Pipe Size	Rod Diameter	Maximum Spacing
Up to 1-1/4"	3/8"	7'-0"
1-1/2" to 2"	3/8"	9'-0"
2-1/2" to 3"	1/2"	11'-0"
4" to 5"	5/8"	14'-0"
6"	3/4"	17'-0"
8"	7/8"	19'-0"
10"	7/8"	20'-0"
12"	7/8"	22'-0"

- J. Drainage piping support shall meet requirements of respective pipe manufacturer and local codes.
- K. Locate hanger supports and accessories to support pipelines, valves, joints, and additional concentrated loads. They shall not restrict free thermal expansion unless otherwise shown.
- L. Hangers on insulated piping systems shall be **oversized** to accommodate insulation thickness as indicated in Insulation specification Section 15.250, including all insulated storm water piping, condensate, and piping for cold fluids. Provide pipe covering protection shields for applicable insulated piping as specified in Section 15.250, equal to Grinnel (figure 167).
- M. Special pipe materials (e.g. plastics) shall be supported per manufacturer's recommendations and/or table 308.5 of the International Plumbing Code and Michigan Plumbing Code.

2.5 VENT FLASHING, SIZING, AND SLOPE

Flash all vent stacks at the roof. Vent stack installation shall be coordinated with roofing material on project. Flashing shall extend up and be turned over the top of the vent pipe at least one inch (1") to fit tightly against the side of the vent pipe. Flashing shall extend eight inches (8") or more on the roof surface, overlapped by and cemented to the roofing. Each vent stack shall be increased to a minimum size of three inches (3") through roof and shall extend above the roof a minimum of twelve inches (12"). Grade horizontal vent lines 1/8" per foot, minimum.



2.6 CLEANOUTS

Cleanouts shall be J.R. Smith, Josam, Wade, Watts, or Zurn according to the following schedule:

Location	Josam No.	Zurn	Wade No.	Specification
Floors - Concrete Areas	56070	Z-1400-HD	W-6000-Z	Cast iron body floor cleanout with flange, housing, ferrule with plug and round cast iron secured tractor type cover.
Walls	58540 & 58600	ZS-1469	W-8470-R	Brass plug with stainless steel secured access cover.
Exterior Concrete Areas	56070-2	Z-1400	W-6000	Same as concrete floors, except that cleanouts in finished areas near building shall use nickel bronze scoriated top.
Exterior Asphalt and Unpaved Areas	56070-2		W-6000	Same as concrete floors except pour 12" diameter conc. pad around cleanout. Nickel bronze top for cleanouts in finished areas near building.

2.7 ISOLATION

Isolate all dissimilar piping materials with insulating couplings equal to Lochinvar V-line, Walter Vallet, Stockham, or Viking. Clear-Flow nipples made by Precision Plumbing Products of appropriate rating may also be used. **At no time will bronze fitted valves be considered acceptable for isolation between dissimilar metals.**

2.8 FLOOR DRAINS

- A. Provide floor drains complete with deep seal traps (consisting of a 4 inch seal), clean outs as indicated; strainers and funnels as indicated.
- B. Provide floor drains complete with deep seal traps (consisting of a 4 inch seal), clean outs as indicated; strainers and funnels as indicated.
- C. Include installation of waterproof membrane securely attached to drain body by flashing ring. Membrane shall be as made by Oatey, chlorinated polyethylene (CPE), 40 mil thickness or approved equal, meeting local plumbing and building codes.



- D. Floor drains shall be by Wade or approved equal by J.R. Smith, Josam, Watts, or Zurn. All floor drain bodies shall have pre-drilled and plugged tap for trap primer.

Floor Drain No.	Josam	Zurn	Wade No.	Specification
FD-1 (unfinished areas)	30000-7E	ZN-415-7N	W-1100-TS	Cast iron body, clamping device, 7" top size, pipe size per plans, adjustable nickel brass heavy-duty strainer w/tractor grate.
FD-1A	30000-E2	ZN-415-7N-6F	W-1100-TS-EF6	Same as FD-3 except with EF-6 funnel.
Floor Sink No.	Josam	Zurn	Wade No.	Specification
FS-1	49050AS	ZN-1901-KC-Z	W-9140-12 x12-8-15	Cast iron body, square, 12x12-8, seepage flange, clamping device, 12"x12", 1/2 grate satin nickel bronze top, 8" deep, ARE interior, aluminum dome strainer.
FS-2	49010	ZN-1910-KC-2	W-9110-8x8- 6-15	Cast iron body, square, 8x8-6, seepage flange, clamping device, 8"x8", 1/2 grate satin nickel bronze top, 6" deep, ARE interior, aluminum dome strainer.
FS-3	49030AS- 31	ZB-610-90-H	W-2370-27	Cast iron body, clamping device, sediment bucket, and heavy-duty hinged grate, satin bronze veneer top.

2.9 TRAP PRIMER

TP-1 (Trap Primer): Floor drains are required to have individual trap primers for each trap per the Michigan Plumbing Code. Trap primers must be ASSE listed. Provide and install trap primer equal to Precision Plumbing Products Prime-Rite Model 500. See drawings for locations. Route minimum of ½" line from trap primer to floor drain tap and see drawings for detailed installation directions.

2.10 VIBRATION ISOLATORS AND FLEXIBLE CONNECTORS

- A. Type 2 Hangers: Model SFH by Peabody Consolidated Kinetic (or equal by Vibration Mountings and Control, Inc.) combination spring and fiberglass hangers, incorporating 2" thick neoprene jacketed pre-compressed molded fiberglass inserts in series with springs, all encased in welded steel brackets. The outside spring diameter shall be a minimum of 0.8 times the designed spring operating height, and shall have a minimum additional travel of 50% between the design height and solid height.
- B. Flexible Connectors: Equipment connections for water piping and compressed air piping shall be braided hose type as made by Flexonics, Atlantic Hose, or Thermo-Tech of appropriate material and ratings.

2.11 AIR ADMITTANCE VALVES

Individual air admittance valves shall conform to ASSE 1051 and shall be equal to Oatey "Sure-Vent" or Studor. Contractor shall confirm the proper application and air admittance valve size prior to installation.

2.12 ACCESS DOORS

Provide access doors by Milcor, Babcock-Davis, Bilco, Cessco, or American Hatch where valves, traps, and other items needing access are concealed and must be serviced, operated, or maintained. Access doors shall match adjacent finish and shall be equipped with Allen key device for locking purposes.

2.13 SUMP PUMP

Pump shall be ITT submersible effluent pump of the size and capacity shown on the equipment schedule with semi-open multi-vane impeller with pump-out vanes, cast iron volute type casing and impeller, motor submerged in oil-filled chamber, and severe duty oil and water resistant power cable with epoxy seal on motor end of cord. Provide level control float switches. Also provide duplex pump control panel with lead/lag control, alternator circuit, and high level alarm.

2.14 PLUMBING FIXTURES

A. General:

1. Faucets for lavatories shall be as **specified** or **equal** as approved by Engineer. Refer to lavatory or sink specifications herein for manufacturer, models and descriptions. Acceptable equal alternate manufacturers are American Standard, Chicago Faucets, Delta, Speakman, Symmons, T&S Brass, and Zurn. If submitted faucet is determined by the engineer to not be an equal, than base bid faucet shall be supplied in all cases.
2. Fixtures shall be caulked to floors and walls.
3. All fixtures shall be white unless otherwise specified.
4. No materials may be used which will place dissolved lead into the potable water stream.
5. **Supplies:** Provide shutoff valves or stops at all fixtures. Use **1/4**-turn ball valves, as shutoff valves, gate valves are not acceptable. Note: All stops shall utilize threaded or sweat connections on supply side (inlet to stop). No **compression** fittings are allowed on the **inlet side to the stop**. Supply kits for lavatories and water closets shall include **commercial grade** chrome plated brass stops with brass stems and handles. No plastic stems or handles. Include chrome plated copper risers. **Stainless steel flexible supplies as manufactured by Watts or Brasscraft are allowed only under cabinets or in non-exposed areas.** Inlet and outlet sizes for all supplies shall be 3/8" or 1/2" as needed. Supply kit shall be certified by a recognized testing authority, marked with the manufacturer's name and shall comply with the SDWA (Safe Drinking Water Act) "No Lead restrictions of ANSI NSF 61 Sec. 9. Acceptable manufacturers are Brasscraft, Keeney, McGuire, Watts, and Zurn, all **commercial grades**. Loose key stops required for all exposed areas. Handle stops are acceptable under sinks and/or lavatories located in cabinetry.
6. **P-Traps:** Lavatory and sink p-traps shall be chrome plated cast brass with cleanout, 17-gauge seamless brass adjustable wall bend, cast brass slip nuts and no reducing washers. Traps shall have shallow flange and minimum of 2" water seal. 1 1/4" size for lavatories and 1 1/2" size for sinks. Trap shall be certified by a recognized testing authority and stamped with such insignia, and marked with the manufacturer's name clearly legible for inspection. Acceptable manufacturers are Brasscraft, Keeney, McGuire, and Zurn, all **commercial grades**. For barrier free fixtures, utilize typical offset configured drain if fixture **does not** meet ADA requirements.
7. **Grid Drain:** Grid drains for lavatories shall be 1 1/4" or 1 1/2" chrome plated cast brass strainer, open grid style with brass lock nut. Drain tailpiece shall be 17-gauge seamless brass tube and minimum of 6" long. Grid drain shall be certified by a recognized testing authority and marked with the manufacturer's name. Acceptable manufacturers are Dearborn, McGuire, Keeney, and Zurn.



8. **NOTE:** Traps, Strainers and Supplies shall rough in full to connections. Adapter extensions are not allowed.
9. **Point of Use Thermostatic ASSE 1016 Mixing Valves:** Acceptable manufacturers are Watts, Lawler, and Powers. Alternate manufacturers will need to be submitted for engineer's approval and must be ASSE 1016 "listed".

B. Sinks:

S-1: Fiat utility sink, Model FL1, floor stand mounting, with T&S deck mounted faucet, model B-1113, 12" nozzle, and 4" centers.

2.15 OTHER MATERIALS

All other materials, not specifically described but required for a complete and proper installation, shall be new, first quality of their respective kinds and subject to the approval of the Architect/ Engineer.

3 EXECUTION

3.1 SURFACE CONDITIONS

A. General:

1. Prior to all work of this section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
2. Verify that plumbing may be installed in strict accordance with all pertinent codes and regulations and the approved shop drawings.

B. Discrepancies:

1. In the event of discrepancy, immediately notify the Architect/Engineer.
2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.2 PLUMBING SYSTEM LAYOUT

A. General:

1. Layout the plumbing system in careful coordination with the approved shop drawings, determining proper elevations for all components of the system and using only the minimum number of bends to produce a satisfactory functioning system.
2. Follow the general layout shown on the approved shop drawings in all cases except where other work may interfere.



- B. Enclosure of Pipes: Except where specifically permitted by the Architect/Engineer, lay out all pipes to fall within partition, ceiling, or roof cavities and to not require furring other than that shown on the approved shop drawings.

3.3 TRENCHING AND BACKFILLING

Perform all trenching and backfilling associated with the plumbing installation in strict accordance with all pertinent provisions of Section 02.200 of these specifications.

3.4 EXISTING SERVICES

- A. Where existing sewers, domestic, and heating piping, gas, potable water, electric, or other services are encountered in areas in which their presence was unknown by best available information (including "Miss Dig" information from local utility companies), each affected Contractor shall take adequate steps to protect such services.
- B. If such existing services require relocation, make written request for ruling from the Architect/Engineer. Do not proceed on such portions of the work until written instruction is received.
- C. Inactive services shall be plugged, capped, or removed. Notify utility companies, municipal agencies having jurisdiction and Architect/Engineer. Protect or remove as directed.

3.5 INSTALLATION OF PIPING AND EQUIPMENT

A. General:

1. Install all piping, promptly capping or plugging all open ends and making pipe generally level and plumb, free from traps, and in a manner to conserve space for other work.
2. Provide uniform pitch of $\frac{1}{4}$ " per foot when possible and $\frac{1}{8}$ " per foot minimum for all horizontal waste and soil piping within the building; pitch all vents for proper drainage; install vent piping with each bend 45° minimum from the horizontal wherever structural conditions will permit.
3. Cushion all traps and bearings to minimize transfer of sound; firmly anchor all pipes in position; provide complete isolation of dissimilar metals; provide air chambers at all fixtures.
4. Inspect each piece of pipe, tubing, fittings, and equipment for defects and obstructions; promptly remove all defective material from the job site.
5. Install pipes to clear all beams and obstructions; do not cut into or reduce the size of load carrying members without the approval of the Architect/Engineer.
6. Locate all vent pipe discharges in accordance with plumbing and mechanical codes having jurisdiction relative to distances from air intakes, windows, and other situations where their presence constitutes a hazard (generally at least ten (10) feet horizontal distance from or three (3) feet vertical distance above air intakes).



B. Joints and Connections:

1. Threaded Joints: Joints in threaded piping shall be made with graphite and oil joint compound, or specified lubricant, applied to the male thread only. Care shall be used to keep the inside of the pipe clean from joint compound, cuttings, scale and other foreign material. Pipe shall be reamed full size. Leaking joints shall be repaired by replacement with new threaded materials.
2. Welded Joints:
 - a. Where welding is called for, it shall be of the fusion process and shall consist of welding by means of either the oxy-acetylene or electric arc process.
 - b. All welding shall conform to the ASME Code for Power Boilers, or the ANSI code for Pressure Piping (latest edition).
 - c. The connections to a welded pipe 2" and larger shall be made with a welding tee or Weld-O-Let of butt, socket, or threaded type as required.
 - d. Only welding ells may be used for changing pipe directions of welded pipelines. Mitered joints will not be permitted.
3. Where PVC pipe is used, solvent cementing method, performed in strict accordance with manufacturer's written instructions except where other types of joints are shown or specified, shall make joints.
4. Pack all joints in cast iron soil and waste pipe and fittings, using approved material and method, securing fully and properly caulked and smoothly finished, except where compression-type neoprene or no-hub fittings are permitted and used.
5. Make all aboveground joints in copper tube with lead-free solder applied in strict accordance with the manufacturer's recommendations. Use compression or flared joints underground in accordance with the plumbing code.

3.6 INSTALLATION OF VALVES

- A. Gate and globe valves shall not be installed with stem below the horizontal.
- B. Gate or ball valves shall be provided ahead of each pressure reducing valve, automatic regulating valve, in all main branches of the piping system at piece of equipment and where necessary to dismantle, drain, and repair the systems. Provide globe valves in bypasses around flow or pressure regulating valves and where throttling service is required unless otherwise indicated.

3.7 INSTALLATION OF VIBRATION ISOLATORS

See equipment schedule on drawings for the type of isolator and static deflection required. Where isolation type and required deflection are not shown, equipment shall be isolated in accordance with the 1995 (or current version) ASHRAE Application Handbook, Chapter 43, particularly Table 42, or ASPE Plumbing Systems Chapter 14 recommendations.



3.8 INSTALLATION OF PLUMBING FIXTURES

- A. The rims, fronts and all exposed parts of lavatories, service sinks, water closets, drinking fountains and other fixtures shall be covered and protected with suitable guards and building paper until completion of the work. This protection is to be installed immediately at the time of setting plumbing fixtures and to be removed only when the completed project is turned over to the Owner.
- B. All fixtures shall be sealed gas and watertight at walls and floors by use of caulking compounds. Manufacturer's recommended hold down bolts shall be used and shall be equipped with nuts and washers.
- C. Roughing in dimensions shall be determined only from fixture brochures approved by the Architect/Engineer.
- D. Mounting of fixtures shall meet handicap requirements where applicable.

3.9 INSTALLATION OF UNDERGROUND PIPING

- A. Sewer Pipe:
 - 1. The trench shall be dry during the pipe laying operation. If dewatering is needed, it shall be this contractor's responsibility. The trench bottom shall be prepared as previously specified. Bell holes shall be excavated to that after placement, the barrel of the pipe will have full bearing on the trench bottom.
 - 2. Pipe shall be protected during handling against impact shocks and free fall.
 - 3. The laying of the pipe shall commence at the outlet and proceed up grade with spigot ends pointing in the direction of flow.
 - 4. The socket of the pipe last laid shall be wiped clean and the spigot end of the pipe to be laid shall then be centered and pushed home against the base of the socket. The pipe shall be centered so that they will form a sewer with a uniform invert. The joints shall be made as previously described.
 - 5. All pipe shall be laid to the line and grade called for on the plans or minimum slope necessary to satisfy plumbing code. Each pipe, as laid, shall be checked the contractor with a suitable sighting level beam to insure that this result is obtained.
 - 6. After the pipe is laid, sharp sand or fine gravel shall be carefully deposited along the sides of the pipe. Backfill shall be carefully tamped under the haunches of the pipe. Care shall be taken during backfilling and tamping so that the line and grade of the pipe are not disturbed. Any pipe found off grade or out of line shall be relaid properly by the contractor. Additional sand, gravel or stone shall then be placed until the entire width of the trench is filled to not less than one (1) foot above the top of the pipe. If sand is used for back fill around the pipe, it shall be thoroughly compacted with a vibratory compactor; hand compaction will not be acceptable. The remainder of the backfilling may be done in the manner presented elsewhere in these specifications.



7. Minimum cover for exterior piping shall be four feet (4') unless otherwise specified. Interior piping should have minimum distance of 6 inches from top of pipe to bottom of floor slab except where minimum slope cannot be maintained.
8. Mark all exterior stub end locations noting location, depth, direction of flow and where applicable, slope with a 1" x 2" redwood marker which is to extend vertically from the point marked to within 6" of the finished grade.

3.10 TESTING OF DRAINAGE AND VENT PIPING

- A. Drainage and vent piping shall be tested in accordance with the 2000 International Plumbing Code, Michigan Plumbing Code 2000, as applicable and as specified herein. The Contractor may test the piping with compressed air (pneumatic test) or with standing water, at his discretion.
- B. Pneumatic Tests:
 1. Air tests, when specified, shall be performed with clean, dry, oil-free air, or nitrogen, as required by process consideration. The source shall be equipped with appropriate pressure relief valves and gauges.
 2. Air tests shall be conducted by forcing air into the system until there is a uniform gauge pressure of 5 psig, or sufficient to balance a 10 inch column of mercury. This pressure shall be held for a minimum test period of 15 minutes. Any adjustments to the test pressure required because of changes in ambient temperature or the seating of gaskets shall be made prior to the beginning of the test period.
 3. Tested systems shall be vented immediately upon successful completion of the test.
 4. No repair welding shall be performed on a pressurized system.
 5. Where both hydrostatic and pneumatic tests are run on a section of pipe, the hydrostatic test shall precede the pneumatic.
- C. Standing Water Test: A water test shall be applied to the drainage system either in its entirety or in sections. If applied to the entire system, all openings in the piping shall be tightly closed, except the highest opening, and the system shall be filled with water to point of overflow. If the system is tested in sections, each opening shall be tightly plugged except the highest openings of the section under test, and each section shall be filled with water, but no section shall be tested with less than a 10 foot head of water. In testing successive sections, at least the upper 10 feet of the next preceding section shall be tested so that no joint or pipe in the building, except the uppermost 10 feet of the system, shall have been submitted to a test of less than a 10 foot head of water. The water shall be kept in the system, or in the portion under test, for at least 15 minutes before inspection starts. The system shall then be tight at all points.



3.11 TESTING OF POTABLE WATER PIPING

A. General Procedures:

1. Furnish all required personnel and equipment and make all tests required to receive the approval of the Architect/ Engineer and all agencies having jurisdiction, including the Michigan Department of Consumer and Industry Services Plumbing Code, incorporating the 2000 Edition of the International Plumbing Code. Where the requirements of this specification are more stringent than those of the agencies listed, the testing requirements specified herein shall apply.
2. Use Piping Pressure Test Form from Section 15.005 for record purposes where applicable.
3. Inspectors representing the Owner shall have access at all times to all portions of the piping systems. The Contractor shall make reasonable provisions to enable the inspectors such access.
4. All tests shall be witnessed by an inspector representing the Owner. The inspector shall be a representative from the Architect/Engineer's office or, with prior approval, a representative from the Construction Manager's field office.
5. The Contractor shall take every precaution during testing to ensure the safety of the operating personnel. Systems to be pressurized shall be provided with appropriate gauges and pressure relieving devices.
6. Prior to every test the piping systems shall be visually inspected to assure that there are no visual defects and that all connections appear to be tight.
7. All joints, including welds, shall be left un-insulated, unpainted, and exposed for examination prior to and during testing.
8. As far as is practicable, all pressure tests shall be complete system tests. Where project conditions and/or schedule necessitate, pipe shall be tested in sections. No pipe or joint shall be untested.
9. Tested systems shall not exceed allowable pressure loss for 24 hours.
10. Where any work or installation does not pass the initial test, the necessary corrections shall be made to comply with the requirements. Retesting of lines after repairs shall be done in conformance with the original testing requirements.



B. Water Supply System Test

1. Water supply systems shall be tested under a water pressure equal to 50% greater than the system operating pressure or 50 psig, whichever is greater. The system operating pressure is defined as the static pressure at a nearby hydrant, as tested by local water authority. The static pressure test data used shall be the most recent available. If no static pressure tests are available, or if the local water authority determines that the most recent test may not be reliable, the Contractor shall request a new test. System testing shall not commence until reliable system static pressure data is available.
2. All test pressures shall be maintained for a minimum of ten minutes before visual examination of joints begins.
3. Hydrostatic test pressures shall not be applied until the piping system and the testing medium have reached thermal equilibrium.
4. Equipment that is not to be subjected to the pressure test shall be either disconnected from the piping or isolated by blinds or other means during the test. Valves may be used provided that the valves are suitable for the proposed test pressure.
5. Expansion joints shall be provided with temporary restraint, if required, for the additional pressure load under test, or shall be isolated from the test.
6. Control devices, air vents, instruments, pressure relief and thermal relief valves shall be excluded from the test.
7. Lines that are spring or counterweight supported and all vapor or gas lines shall be temporarily supported during the test in order to support the test fluid load, if necessary.
8. Lines containing check valves shall have the pressure applied upstream of the check valve so that pressure is applied under the seat.
9. Caulking of screwed joints or peening of welds to repair non-compliant piping is not permitted. In the event leakage occurs, pipe shall be dismantled, re-threaded or re-welded and new fittings shall be installed.
10. Hydrostatic test pressures for fiberglass reinforced plastic, glass or plastic pipe, must not exceed manufacturer's recommended working pressure.
11. During the tests, hydrostatic pressures shall be monitored and corrections shall be made to compensate for thermal expansion or contraction. By this procedure the test pressure shall be kept within five (5) psig or one percent, whichever is greater, of its intended value.



C. Test Reports:

The Contractor shall make a record of the test applied to each piping system, which shall consist of the following data:

1. Line designation number.
2. Date of test.
3. Type of test, pressure applied, and length of time at test pressure.
4. Tested by:
5. Comments, if any:
6. Piping Pressure Test Report (attached) to be completed.

3.12 STERILIZATION AND BACTERIOLOGICAL TESTING OF POTABLE WATER PIPING

A. General:

1. After preliminary purging of the system, chlorinate the new section of potable water piping in accordance with the current recommendations of the American Water Works Association and in accordance with all pertinent codes and regulations.
2. Chlorinate only when the buildings are unoccupied and before water is used for human consumption. Post signs at all taps stating water is unsafe; remove signs after chlorination.

B. Flushing:

1. Upon completion of the sterilization, thoroughly flush the entire potable water system.
2. When sterilization and flushing are complete, arrange with the Michigan Department of Environmental Quality (517) 335-8184 , or other applicable local agency, for bacteriological tests on all mains and systems. Include all testing costs in your Bid price.
3. Furnish test results to the Architect/Engineer.
4. Contractor shall repeat chlorination and flushing if tests show water is unsafe.



3 .13 CLOSING IN UNINSPECTED WORK

- A. General: Do not cover up or enclose work until it has been properly and completely tested, inspected, and approved.
- B. Non-Compliance: Should any of the work be covered up or enclosed prior to all required inspections and approvals, uncover the work as required and, after it has been completely inspected and approved, make all repairs and replacements with such materials as are necessary to the approval of the Architect/Engineer and at no additional cost to the Owner.

3 .14 CLEANING UP

Prior to acceptance of the work, thoroughly clean all exposed portions of the plumbing installation, removing all labels and all traces of foreign substance, using only a cleaning solution approved by the manufacturer of the plumbing item and being careful to avoid all damage to finished surfaces.



LANSING
SCHOOL
DISTRICT

Committed to Quality

STATEMENT OF NO BID

NOTE: IF YOU DO NOT INTEND TO BID, PLEASE RETURN THIS FORM ONLY TO:

Lansing School District
519 W KALAMAZOO ST
LANSING, MI 48933

BID NO: # _____

PHONE: 517-755-3030
FAX: 517-755-3039

We, the undersigned, have declined to bid on the above noted bid for the following reasons:

- _____ Insufficient time to respond to the invitation to Bid.
- _____ Request for Proposal unclear.
- _____ Do not offer this product or service.
- _____ Our schedule will not permit us to perform.
- _____ Unable to meet the specifications
- _____ Specifications are unclear (Please explain below)
- _____ Remove us from your Bidder Mailing List
- _____ Other (Please specify below)

REMARKS:

Company Name: _____

Signature: _____

Date: _____ Telephone: _____ Fax: _____

Section 3000 – Fiscal Management

3610 Purchasing Goods and Services

3610

The Superintendent, and or his/her designee, shall be the sole purchasing agent for the District.

The purchase of goods and services required for the operation of the Lansing School District shall be conducted in accordance with all applicable laws. The purchasing process shall be open and competitive. Purchasing award decisions may include price; product quality; service; delivery; maintenance of product; adherence to specifications; past performance to the District; supplier reliability; warranties; supplier environmental responsibility; supplier school-to-work programs (including apprentices and cooperative training programs), supplier community responsibility; responsible contracting compliance, increasing the diversity of the supplier pool (as permitted by law) and increasing the percentage of contracts with local companies.

The Lansing School District places a high value on the richness of our diverse schools and community. The District will play a leadership role in promoting inclusiveness and the elimination of discrimination. All suppliers doing business with the school district must comply with state and federal laws on equal employment opportunity. In addition, companies responding to requests for formal bids for goods or services shall be required upon request to submit to the school district verification of compliance with laws. Suppliers shall state they do not discriminate against any employee or applicant for employment because of race, color, religion, national origin, sex, age, height, weight, marital status, or disability. Failure to present such and/or to not comply with state and federal laws on equal employment opportunity shall result in the supplier being removed from the District's supplier list and the rejection of the supplier's bids.

Cooperative Purchasing

Governmental cooperatives, joint governmental purchasing, and private cooperative purchasing agencies may be used if it is deemed in the best interest of the District and the agency adheres to the requirements of this policy.

Purchases through the District

Board members and employees shall not make any purchase through or in the name of the District for personal use. The name of the District or school or the employee's position, shall not be used in such manner that discounts or cost preferences are given to such person. Purchasing equipment and supplies by the District for resale to employees is prohibited.

Unauthorized Purchases

Unauthorized purchases by staff members are not the responsibility of the Lansing School District. Staff members that commit to unauthorized purchases shall be held individually responsible for payment of such obligations.

Section 3000 – Fiscal Management

3610 Purchasing Goods and Services

3610-2

Emergency Purchases

Emergency purchases of materials or labor for building construction, addition, renovation or repair may be made without using the quotation or bidding process if authorized by the Superintendent. Emergency purchases over the state-imposed bid limit must be authorized by the Superintendent. A report of the emergency purchase shall be presented to the next formal school board meeting for formal approval.

Approved: January 20, 2005

Revised: February 2007

LEGAL REF: MCL 15.321-330

May 9, 2005

Lansing School District
Administrative Regulation

3610-R Purchasing Rules and Procedures

The purchasing of all goods (supplies, materials and equipment) and services required for the operation of the Lansing School District shall be conducted in accordance with all applicable state and federal laws and Lansing School District policies.

A centralized purchasing process shall be utilized. Except as noted below, purchase orders or contracts shall be issued for all purchases. Documentation shall be maintained for all requisitions, bids, and purchases in accordance with the State of Michigan requirements.

The Purchasing Office shall publish the requisition process. The requisition process shall properly identify the items needed, the purpose for which they are intended, the specific account to which the items are to be charged, and the authority of the requesting party to order such items. Specifications shall be developed that adequately describe the District's requirements and encourage competitive bidding.

In accordance with state law, the District shall not purchase an item or group of items in a single transaction exceeding the state-imposed limit per Revised School Code, unless competitive bids are obtained and the purchase is approved by the Board of Education. Purchases cannot be artificially divided to lower the threshold applicable under this regulation or any Lansing School District purchasing policies, regulations or procedures.

All purchases (including supplier selection) are subject to the approval of the Purchasing Director acting as the purchasing agent for the Lansing School District. Purchases of commodities where adequate supply and competition is available within the local district to meet the district need may be redirected to local sources.

Formal Bids:

Formal bid procedures shall include, but not be limited to, a sealed bid process for purchases exceeding the state imposed limit. Bid security and performance bonds may be required per state law or at the discretion of the Superintendent or an appropriate designee. Construction bids shall be advertised and processed in accordance with state law. Construction bidders shall be required to submit names, location, ownership information and pricing of all sub-contractor bids as required in the request for bid or during bid evaluation. Failure to do so will disqualify the bid.

Bid security, performance and payment bonds shall be required in accordance with the State law.

Additional Purchasing Methods:

Purchase transactions of less than \$250 may be made using purchasing cards, verbal purchase orders or other expedited procedures as approved and monitored by the Director of Purchasing. The limit may be increased above \$250 per transaction if otherwise required by job function and approved by the Superintendent or his/her designee. Each purchasing card will have an overall limit as determined by the Superintendent.

Informal quotations (required to be in writing), contract or cooperative purchasing, blanket purchase orders, emergency purchase orders (when authorized per policy) or formal bids may be used.

Change Orders:

Change orders for capital projects can be approved within the scope of the approved project contingency by the Superintendent. Any change orders beyond the scope of the project contingency must be approved by the Board of Education.

Change orders for bond issue projects can be approved as follows:

Changes up to \$100,000 - Approved by the Superintendent with subsequent notice to the Finance Committee of the Board of Education.

Changes over \$100,000 - Approved by the Board of Education prior to commencing work.

Bid Appeal Process:

Purchase award recommendations may be appealed to the Director of Purchasing for review. The Director of Purchasing shall review input from the requisitioning administrator and the party requesting review along with other information per his/her discretion. Additional appeals shall be made to the Chief Financial Officer and to the Superintendent, in that order. Oral or written information from both the party requesting the review and the District's Purchasing Office will be considered at any appeal. When reasonable for the efficient functioning of the District, the Lansing School Board may table final decision on the purchase award until the appeal process is complete.

Staff - Purchase Order Procedure

The purchase order (PO) shall be used for all purchases that will be paid for by District funds. To initiate a purchase order, please follow this procedure.

1. A staff person who has budget responsibility (or his/her designee) enters a requisition in the on-line purchasing system. Access to this system may be obtained by sending a request in writing to the Technology Department.

When entering the requisition in the purchasing system the following information will be required: the potential company name, item description, estimated unit costs, account number, and location of use.

2. All requisitions are reviewed and processed according to Board policy and Purchasing Office procedures. Processing may include consolidation of orders, local sourcing or bidding.

3. Once the requisition is converted to a purchase order and all approvals have been obtained, a written purchase order is generated and sent to the vendor. A copy is sent to the requesting party.

4. The order may designate direct delivery to your location. If so, write the purchase order number on all receipts and invoices. Receipts and invoices must be sent to the Accounting Office. The receipt should be signed by the staff person who received the item(s). Payment will be made to the vendor when an order, invoice and receipt are matched.

5. A blanket purchase order may be requested using the same procedures as listed above. A blanket purchase order covers repeated small purchases of supplies or materials from one vendor (example toner and supplies for a copier). The request should indicate a period of time for which the order is valid, a maximum dollar amount that may be spent. And the names of staff members who are authorized to make a purchase.

Supplier – Purchase Order Procedure

Suppliers of goods to the Lansing School District shall be notified of the following:

1. **No purchases on Lansing School District accounts shall be made without a Lansing School District purchase order number.**
2. No Lansing School District purchases shall be considered tax exempt without a Lansing School District purchase order number.
3. Lansing School District principals and other administrative staff will approve Lansing School District purchases under a Small Purchase Order amount authorized by the Purchasing Office. This approval will be verified by a Lansing School District purchase order number or written purchase order.
4. All purchases in excess of the Small Purchase Order amount must be authorized by the Lansing School District, Purchasing Office. This authorization will be verified by a Lansing School District written purchase order.
5. Purchases made by Lansing School District staff members without a purchase order number (or that exceed the dollar amount authorized by a purchase order) are the financial responsibility of the individual staff member and will not be paid by the Lansing School District.
6. All invoices shall be sent to:
Lansing School District
Accounts Payable
519 West Kalamazoo
Lansing MI 48933
7. **The Lansing School District purchase order number should appear on all packing slips and invoices.** Charges from only one purchase order should appear per invoice. Invoices for a partial purchase order will be paid, if all items invoiced have been received.

General Conditions and Instructions to Bidders

1. Proposals shall be submitted on forms furnished by the owner. The proposal shall be in accordance with the specifications listed, which are available at the Lansing School District Purchasing Office.

Any variance from the specifications shall be fully explained in writing by the bidder and all prices quoted shall be on a unit price basis.

2. **MAILING OF PROPOSALS:**

Proposals shall be mailed in an opaque, sealed envelope and shall be clearly marked describing the project upon which the bid is made.

3. No oral, telegraphic facsimile, or electronic mail proposals or modifications will be considered.

4. **WITHDRAWAL OF BIDS:**

Any bidder may withdraw their bid at any time prior to the scheduled time of opening the bids upon the presentation of proper identification. After the opening of the bids, no proposal shall be withdrawn for a period of ninety (90) days.

5. **PROPOSAL FORMS AND SIGNATURES:**

Proposals shall be made on the proper forms provided by the owner. All spaces shall be properly filled in with ink or typewriter. The signatures shall be in longhand in ink by an authorized representative.

6. **BRANDS:**

The naming of a manufacturer, brand or model number shall not be considered as excluding other brands or models. Specifically, similar products with comparable construction, material and workmanship shall be considered as equal. However, the Board of Education of the Lansing School District shall evaluate the merits of all bids submitted and reserves the right to accept or reject any or all bids.

It is the intent of the attached specifications to define the minimum quality of equipment acceptable. The product lines of nationally recognized manufacturers who regularly advertise, promote and distribute catalog products to the school market are required.

7. **SAMPLES:**

Samples shall be submitted upon request at the expense of each bidder. These samples will be retained as control items until the completion of the delivery and installation.

8. **AGENDA:**

Any modifications of contract documents will be issued in the form of an addendum.

All addenda issued during the bidding time shall become part of the specifications. A copy of the addendum shall be sent to all bidders. No verbal statements by the owner shall be considered as authoritative. No request for explanations can be processed within four (4) days immediately prior to the bid opening date.

9. **VARIATIONS FROM MATERIALS SPECIFIED:**

All variations from the specified material or equipment shall be fully explained and included with the bid. Manufacturer numbers shall be used in all cases.

10. **ROYALTIES AND PATENTS:**

The contract shall pay for all royalties and patents, and shall defend all suits for claims or infringements on patent rights and save the owner harmless from loss on account thereof.

11. **CLEAN-UP:**

The contractor shall at all times, keep the premises free from accumulations of waste materials or same caused by the work; and upon completing the work, shall remove all work related rubbish from and about the building and shall leave the work broom clean, or it equivalent. In the case of dispute, the owner may remove the rubbish and charge the cost to the contractor, as the owner shall determine.

12. **FEDERAL, STATE AND MUNICIPAL TAXES:**

Each proposal submitted shall include, and the contractor shall pay, all taxes which are levied by the Federal, State and Municipal Governments, on labor, and for materials entering into the work. The owner reserves the right to require evident of payment of such taxes prior to final payment. The school district is exempt from Federal Excise Tax.

General Conditions and Instructions to Bidders

13. QUALIFICATIONS OF BIDDERS:

The owner may request any or all bidders to submit any of the following information before the award of the contracts.

- A. A bidder's performance record
- B. The address and description of bidder's equipment, plant or permanent place of business.
- C. An itemized list of the bidder's equipment, plant and personnel.
- D. A bidder's financial statement.
- E. A description of any project which the bidder has completed.
- F. Such additional information as will satisfy the owner that the bidder is adequately prepared to fulfill the contract.
- G. Description of work which will be done simultaneously with the owner's project.

14. NOTICE OF AWARD:

The contracts shall be deemed as having been awarded when the formal notice of acceptance of their proposal has been duly served upon the intended awardees (normally by purchase order) by some officer of agent of the owner duly authorized to give such notice.

15. GUARANTEE:

Each contract shall furnish the owner a written guarantee running for one (1) year, or longer as required herein, after the final payment covering all work in the contract. Any defects in workmanship or materials for which a claim is submitted within this period shall be corrected.

16. DOCUMENTS:

The Proposals submitted shall be based upon the specifications contained herein.

17. RIGHTS OF ACCEPTANCE OR REJECTION:

The Board of Education of the Lansing School District reserves the right to reject any or all bids in whole or in part and to accept the bid or portion of bid that, in their opinion, best serves the interest of the School District.

18. Contractors and subcontractors are required not to discriminated against any employee or applicant for employment, to be employed in the performance of this contract, with respect to hire, tenure, terms, conditions or privileges of employment because of race, color, religion, national origin, or ancestry or also because of age or sex, except based on a bonafide occupational qualification. Breach of this covenant of purchasing agreement as provided in the Michigan Fair Employment Practices Act and may be processed there under. See Policy 3610



In order to maintain the public trust, your local school district Board of Education should consider and adopt a resolution containing at least some, if not all, of the factors listed below.

Each factor should be discussed thoroughly by school board members, the architects and construction managers involved in any school construction because of the potential impact they will have on a project.

Your construction manager and design professional will then include these factors in the construction bid documents so all bidders know that in addition to price these items will be considered when construction bids are reviewed.

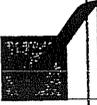


EXPERIENCE. Institutional building projects are expected to last 50-75 years. Therefore school board members should review the past experience of all construction professionals to ensure that they have pertinent experience on similar institutional projects. In so doing, the board members can evaluate whether local contractors should be considered for the project and only if they have the required experience should they be considered.

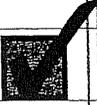


REFERENCES. School board members should investigate the references of their construction professionals from past clients doing similar institutional work. Construction professionals must supply pertinent references from their past clients, including information regarding performance and jobsite cooperation.





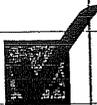
FINANCIAL CONDITION. A good financial rating means stability on the job and all through the project. Construction professionals must show they are financially prepared to perform the work they are bidding on. School boards must obtain information concerning a bidder's financial capability, any outstanding claims against them and bank references. A poor financial condition can affect the quality of materials, equipment and workers used on the project. It also can result in substantial project delays and unsafe schools.



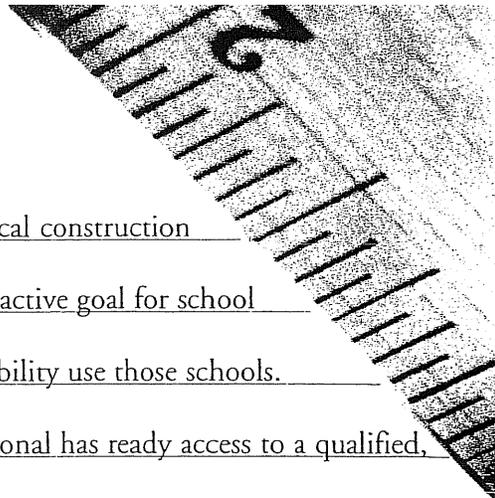
SAFETY & ACCIDENTS. Construction professionals with a good safety and EMR record will be more productive. An employer has an obligation according to the Michigan Occupational Safety and Health Act (MIOSHA) to provide a place of employment free from recognized hazards likely to cause death or serious physical harm. Every employee has the right to a safe and healthy workplace. An employer must provide training in the recognition and avoidance of hazards and specific training called for in the MIOSHA standards.



RESUME OF SUPERVISORY PERSONNEL. Beyond a construction professional's experience with similar institutional projects, it is important for board members to evaluate the resumes of the supervisory personnel of all construction professionals on their project. All supervisory personnel should have pertinent experience and adequate education and training to complete your project.



INSURANCE & SURETY BONDING. Construction professionals must show proof of adequate and relevant insurance coverage for a particular project and must prove their compliance with workers' compensation statutes. School boards must set minimum standards for insurance coverage. Construction professionals that cannot provide proper coverage may be unable to fulfill project obligations. A measure of a construction professional's stability is shown in the ability to secure the required bonding.



USE OF A TRAINED LOCAL WORKFORCE. Employing local construction professionals and skilled craft workers on a project can be an attractive goal for school boards. Local craft workers, their friends and family, in all probability use those schools.

However, it is necessary to determine if the construction professional has ready access to a qualified, experienced workforce to build your project.



PREVAILING WAGE. Use of prevailing wage requirements ensures that school boards secure the best qualified construction professionals to perform work on their projects. Construction professionals should compete for projects on the basis of their management practices, not by paying sub-standard wages. Utilization of prevailing wage will allow the construction professional to pay locally determined wages and benefits to attract qualified skilled craft workers.



EMPLOYEE HEALTH INSURANCE & PENSION BENEFITS. School districts can maintain and promote their community's health care and craft employees by requiring the construction professional to use prevailing wage, which includes health insurance and pension benefits. Construction professionals who provide such benefits to their craft personnel demonstrate a commitment to developing a stable workforce, which is a key component to a quality project and to the health of the community.



WORKFORCE SOURCE & PROPER EMPLOYEE CLASSIFICATION. School boards can ensure that their project will be built by qualified construction professionals by ensuring contractor access to a skilled workforce. School districts should examine carefully the source of building trades craft employees. School districts should ask prospective construction professionals to identify the source of the workforce they intend to use on the project. Construction professionals who staff the project with personnel hired from help-wanted ads or employment agencies might not have sufficient competence and ability to complete a quality project on schedule.

REGISTERED UNITED STATES DEPARTMENT OF LABOR, BUREAU OF

APPRENTICESHIP & TRAINING PROGRAMS. School boards know the value of high quality training and education. Responsible contractors know that better training equals better buildings. Bureau of Apprenticeship and Training (BAT) approved training programs create more productive craft workers. A construction professional's ability to staff a school construction project with qualified trades' workers is the key to success. Contractors, who bid on school construction projects should maintain, participate in and contribute to bona fide apprentice training programs recognized by the U.S. D.O.L./B.A.T. Trained craft workers promote cost effectiveness, timeliness, safety and quality on school construction work. Companies who employ skilled and trained workers, educated in their trade, deliver exceptional work. Moreover, every registered U.S. D.O.L./B.A.T., program must meet twenty-two standards of apprenticeship regulated and audited by the U.S. D.O.L./B.A.T., as outlined in 29 CFR 29.5.

LICENSING. School boards get a better building when highly competent construction professionals and tradespersons build it to code. State law establishes licensing requirements for

electrical, mechanical, plumbing, boiler and elevator contractors, and electrical,

elevator and plumbing craft workers. Proper licensing and certification,

when applicable, show school boards that construction

professionals bidding the job have been tested and are

competent to perform the work. All responsible construction

professionals must provide documented proof of licensing

and certification. This will allow school boards to contact

licensing and certification agencies to verify the bidder's

history and determine if any complaints or judgments

have been filed against them.





STATE OF MICHIGAN

JENNIFER M. GRANHOLM
GOVERNOR

DEPARTMENT OF LABOR & ECONOMIC GROWTH
LANSING

KEITH W. COOLEY
DIRECTOR

REQUIREMENTS OF THE PREVAILING WAGES ON STATE PROJECTS ACT, PUBLIC ACT 166 OF 1965

The Michigan Department of Labor & Economic Growth determines prevailing rates pursuant to the Prevailing Wages on State Projects Act, Public Act 166 of 1965, as amended. The purpose of establishing prevailing rates is to provide minimum rates of pay that must be paid to workers on construction projects for which the state or a school district is the contracting agent and which is financed or financially supported by the state. By law, prevailing rates are compiled from the rates contained in collectively bargained agreements which cover the locations of the state projects. The official prevailing rates provide an hourly rate which includes wage and fringe benefit totals for designated construction mechanic classifications. The overtime rates also include wage and fringe benefit totals. Please pay special attention to the overtime and premium pay requirements. Prevailing wage is satisfied when wages plus fringe benefits paid to a worker are equal to or greater than the required rate.

State of Michigan responsibilities under the law:

- The department establishes the prevailing rate for each classification of construction mechanic **requested by a contracting agent** prior to contracts being let out for bid on a state project.

Contracting agent responsibilities under the law:

- If a contract is not awarded or construction does not start within 90 days of the date of the issuance of rates, a re-determination of rates must be requested by the contracting agent.
- Rates for classifications needed but not provided on the Prevailing Rate Schedule, **must** be obtained **prior** to contracts being let out for bid on a state project.
- The contracting agent, by written notice to the contractor and the sureties of the contractor known to the contracting agent, may terminate the contractor's right to proceed with that part of the contract, for which less than the prevailing rates have been or will be paid, and may proceed to complete the contract by separate agreement with another contractor or otherwise, and the original contractor and his sureties shall be liable to the contracting agent for any excess costs occasioned thereby.

Contractor responsibilities under the law:

- Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing rates prescribed in a contract.
- Every contractor and subcontractor shall keep certified payrolls, as used in the industry, of each and every construction mechanic, and verification of such certified payroll in writing by either a representative or auditor/certified accountant at the end of such a certified payroll. These records should include the occupation and indicate the hours worked on each project for each classification and the actual wages and benefits paid. This record shall be available for reasonable inspection by the contracting agent or the department.
- Each contractor or subcontractor is separately liable for the payment of the prevailing rate to its employees.
- The prime contractor is responsible for advising all subcontractors of the requirement to pay the prevailing rate prior to commencement of work.
- The prime contractor is secondarily liable for payment of prevailing rates that are not paid by a subcontractor.
- A construction mechanic shall only be paid the apprentice rate if registered with the United States Department of Labor, Bureau of Apprenticeship and Training and the rate is included in the contract.

Enforcement:

A person who has information of an alleged prevailing wage violation on a state project may file a complaint with the Wage & Hour Division. The department will investigate and attempt to resolve the complaint informally. During the course of an investigation, if the requested records and posting certification are not made available in compliance with Section 5 of Act 166, the investigation will be concluded and a referral to the Office of Attorney General for civil action will be made. The Office of Attorney General will pursue costs and fees associated with a lawsuit if filing is necessary to obtain records.

A violation of Act 166 may result in the contractor's name being added to the Prevailing Wage Act Violators List published on the division's website, updated monthly. This list includes the names and addresses of contractors and subcontractors the division has found in violation of Act 166 based on complaints from individuals and third parties. The Prevailing Wage Act Violators List is intended to inform contracting agents of contractors that have violated Act 166 for use in determining who should receive state-funded projects.

WAGE & HOUR DIVISION
P.O. BOX 30476 • LANSING, MICHIGAN 48909-7976
www.michigan.gov/wagehour • (517) 335-0400 • FAX (517) 335-0077

www.michigan.gov
(To Print: use your browser's print function)

Release Date: August 09, 2007

Last Update: February 25, 2008

Agency: Labor & Economic Growth

Contractor/Employer Responsibilities

Contractor/Employer responsibilities under the prevailing wage law:

- Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.
- Every contractor and subcontractor shall keep an accurate record showing the name and occupation of and the actual wages and benefits paid to the construction mechanic **including certified payroll, as used in the industry, of each and every construction mechanic, and verification of such certified payroll in writing by either a representative or auditor/certified accountant at the end of such a certified payroll**, employed by him in connection with said contract. This record shall be available for reasonable inspection by the contracting agent or the department.
- Each contractor or subcontractor is separately liable for the payment of the prevailing rate to its employees.
- The prime contractor is responsible for advising all subcontractors of the requirement to pay the prevailing rate prior to commencement of work.
- The prime contractor is secondarily liable for payment of prevailing rates that are not paid by a subcontractor.
- A construction mechanic shall only be paid the apprentice rate if registered with the United States Department of Labor, Office of Apprenticeship and Training and the rate is included in the contract.

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STATE OF MICHIGAN

JENNIFER M. GRANHOLM
GOVERNOR

DEPARTMENT OF LABOR & ECONOMIC GROWTH
LANSING

KEITH W. COOLEY
DIRECTOR

Michigan Department of Labor & Economic Growth *Wage & Hour Division*
OVERTIME PROVISIONS for MICHIGAN PREVAILING WAGE RATE SCHEDULE

1. Overtime is represented as a nine character code. Each character represents a certain period of time after the first 8 hours Monday thru Friday.

	Monday thru Friday	Saturday	Sunday & Holidays
First 8 Hours		4	8
9th Hour	1	5	
10th Hour	2	6	
Over 10 hours	3	7	

Overtime for Monday thru Friday after 8 hours:

the 1st character is for time worked in the 9th hour (8.1 - 9 hours)
the 2nd character is for time worked in the 10th hour (9.1 - 10 hours)
the 3rd character is for time worked beyond the 10th hour (10.1 and beyond)

Overtime on Saturday:

the 4th character is for time worked in the first 8 hours on Saturday (0 - 8 hours)
the 5th character is for time worked in the 9th hour on Saturday (8.1 - 9 hours)
the 6th character is for time worked in the 10th hour (9.1 - 10 hours)
the 7th character is for time worked beyond the 10th hour (10.01 and beyond)

Overtime on Sundays & Holidays

The 8th character is for time worked on Sunday or on a holiday
The last character indicates if an optional 4-day 10-hour per day workweek can be worked without paying overtime after 8 hours worked.

2. Overtime Indicators Used in the Overtime Provision:

H - means TIME AND ONE-HALF due
X - means TIME AND ONE-HALF due after 40 HOURS worked
D - means DOUBLE PAY due
Y - means YES an optional 4-day 10-hour per day workweek can be worked without paying overtime after 8 hours worked
N - means NO an optional 4-day 10-hour per day workweek *can not* be worked without paying overtime after 8 hours worked

3. EXAMPLES:

HHHHHHHDN - This example shows that the 1½ rate must be used for time worked after 8 hours Monday thru Friday (characters 1 - 3); for all hours worked on Saturday, 1½ rate is due (characters 4 - 7). Work done on Sundays or holidays must be paid double time (character 8). The N (character 9) indicates that 4 ten-hour days is not an acceptable workweek at regular pay.

XXXHHHHDY - This example shows that the 1½ rate must be used for time worked after 40 hours are worked Monday thru Friday (characters 1-3); for hours worked on Saturday, 1½ rate is due (characters 4 - 7). Work done on Sundays or holidays must be paid double time (character 8). The Y (character 9) indicates that 4 ten-hour days is an acceptable alternative workweek. (REV 01/15/08)



JENNIFER M. GRANHOLM
GOVERNOR

KEITH W. COOLEY
DIRECTOR

Informational Sheet: Prevailing Wages on State Projects
General Information Regarding Fringe Benefits

Certain fringe benefits **may** be credited toward the payment of the Prevailing Wage Rate:

- If a fringe benefit is paid directly to a construction mechanic
- If a fringe benefit contribution or payment is made on behalf of a construction mechanic
- If a fringe benefit, which may be provided to a construction mechanic, is pursuant to a written contract or policy
- If a fringe benefit is paid into a fund, for a construction mechanic

When a fringe benefit is not paid by an hourly rate, the hourly credit will be calculated based on the annual value of the fringe benefit divided by 2080 hours per year (52 weeks @ 40 hours per week).

The following is an example of the types of fringe benefits allowed and how an hourly credit is calculated:

Vacation	40 hours X \$14.00 per hour = \$560/2080 =	\$.27
Dental insurance	\$31.07 monthly premium X 12 mos. = \$372.84 /2080 =	\$.18
Vision insurance	\$5.38 monthly premium X 12 mos. = \$64.56/2080 =	\$.03
Health insurance	\$230.00 monthly premium X 12 mos. = \$2,760.00/2080 =	\$1.33
Life insurance	\$27.04 monthly premium X 12 mos. = \$324.48/2080 =	\$.16
Tuition	\$500.00 annual cost/2080 =	\$.24
Bonus	4 quarterly bonus/year x \$250 = \$1000.00/2080 =	\$.48
401k Employer Contribution	\$2000.00 total annual contribution/2080 =	\$.96
Total Hourly Credit		\$3.65

Other examples of the types of fringe benefits allowed:

- Sick pay
- Holiday pay
- Accidental Death & Dismemberment insurance premiums

The following are examples of items that **will not** be credited toward the payment of the Prevailing Wage Rate

- Legally required payments, such as:
 - Unemployment Insurance payments
 - Workers' Compensation Insurance payments
 - FICA (Social Security contributions, Medicare contributions)
- Reimbursable expenses, such as:
 - Clothing allowance or reimbursement
 - Uniform allowance or reimbursement
 - Gas allowance or reimbursement
 - Travel time or payment
 - Meals or lodging allowance or reimbursement
 - Per diem allowance or payment
- Other payments to or on behalf of a construction mechanic that are not wages or fringe benefits, such as:
 - Industry advancement funds
 - Financial or material loans

ENGINEERS - CLASSES OF EQUIPMENT LIST

<p>UNDERGROUND ENGINEERS</p>
<p>CLASS I Backfiller Tamper, Backhoe, Batch Plant Operator, Clam-Shell, Concrete Paver (2 drums or larger), Conveyor Loader (Euclid type), Crane (crawler, truck type or pile driving), Dozer, Dragline, Elevating Grader, End Loader, Gradall (and similar type machine), Grader, Power Shovel, Roller (asphalt), Scraper (self propelled or tractor drawn), Side Broom Tractor (type D-4 or larger), Slope Paver, Trencher (over 8' digging capacity), Well Drilling Rig, Mechanic, Slip Form Paver, Hydro Excavator.</p> <p>CLASS II Boom Truck (power swing type boom), Crusher, Hoist, Pump (1 or more 6" discharge or larger gas or diesel powered by generator of 300 amps or more, inclusive of generator), Side Boom Tractor (smaller than type D-4 or equivalent), Tractor (pneu-tired, other than backhoe or front end loader), Trencher (8' digging capacity and smaller), Vac Truck.</p> <p>CLASS III Air Compressors (600 cfm or larger), Air Compressors (2 or more less than 600 cfm), Boom Truck (non-swinging, non-powered type boom), Concrete Breaker (self-propelled or truck mounted, includes compressor), Concrete Paver (1 drum, ½ yard or larger), Elevator (other than passenger), Maintenance Man, Mechanic Helper, Pump (2 or more 4" up to 6" discharge, gas or diesel powered, excluding submersible pump), Pumpcrete Machine (and similar equipment), Wagon Drill Machine, Welding Machine or Generator (2 or more 300 amp or larger, gas or diesel powered).</p> <p>CLASS IV Boiler, Concrete Saw (40HP or over), Curing Machine (self-propelled), Farm Tractor (w/attachment), Finishing Machine (concrete), Firemen, Hydraulic Pipe Pushing Machine, Mulching Equipment, Oiler (2 or more up to 4", exclude submersible), Pumps (2 or more up to 4" discharge if used 3 hrs or more a day-gas or diesel powered, excluding submersible pumps), Roller (other than asphalt), Stump Remover, Vibrating Compaction Equipment (6' wide or over), Trencher (service) Sweeper (Wayne type and similar equipment), Water Wagon, Extend-a-Boom Forklift.</p>

<p>HAZARDOUS WASTE ABATEMENT ENGINEERS</p>
<p>CLASS I Backhoe, Batch Plant Operator, Clamshell, Concrete Breaker when attached to hoe, Concrete Cleaning Decontamination Machine Operator, Concrete Pump, Concrete Paver, Crusher, Dozer, Elevating Grader, Endloader, Farm Tractor (90 h.p. and higher), Gradall, Grader, Heavy Equipment Robotics Operator, Hydro Excavator, Loader, Pug Mill, Pumpcrete Machines, Pump Trucks, Roller, Scraper (self-propelled or tractor drawn), Side Boom Tractor, Slip Form Paver, Slope Paver, Trencher, Ultra High Pressure Waterjet Cutting Tool System Operator, Vactors, Vacuum Blasting Machine Operator, Vertical Lifting Hoist, Vibrating Compaction Equipment (self-propelled), and Well Drilling Rig.</p> <p>CLASS II Air Compressor, Concrete Breaker when not attached to hoe, Elevator, End Dumps, Equipment Decontamination Operator, Farm Tractor (less than 90 h.p.), Forklift, Generator, Heater, Mulcher, Pigs (Portable Reagent Storage Tanks), Power Screens, Pumps (water), Stationary Compressed Air Plant, Sweeper, Water Wagon and Welding Machine.</p> <p style="text-align: right;">Revised: 05/23/08</p>

Official Request #: 1114
Requestor: LANSING SCHOOL DISTRICT
Project Description: MECHANICAL, ELECTRICAL & PLUMBING
Project Number: OLD PATTENGILL MIDDLE & EASTERN HIGH

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<u>Classification</u>			Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description						
Asbestos & Lead Abatement Laborer							
Asbestos & Lead Abatement Laborer		MLDC	7/31/2007	\$32.65	\$43.39	\$54.13	H H H X X X D Y
Asbestos & Lead Abatement, Hazardous Material Handler							
Asbestos and Lead Abatement, Hazardous Material		AS207	11/28/2007	\$32.65	\$44.75	\$56.85	H H H X X X D Y
Boilermaker							
Boilermaker		BO169	11/5/2007	\$51.27	\$76.00	\$100.74	H H H H H H D Y
Apprentice Rates:							
				1st 6 months	\$38.12	\$56.28	\$74.44
				2nd 6 months	\$39.17	\$57.86	\$76.54
				3rd 6 months	\$40.23	\$59.45	\$78.66
				4th 6 months	\$41.29	\$61.04	\$80.78
				5th 6 months	\$42.33	\$62.60	\$82.86
				6th 6 months	\$44.44	\$65.76	\$87.08
				7th 6 months	\$46.54	\$68.91	\$91.28
				8th 6 months	\$48.65	\$72.08	\$95.50
Bricklayer							
Brick, stone, artificial, cement masonry, pointing, caulking & cleaning		BR9-31	8/17/2007	\$41.02	\$54.52	\$68.02	H H H X X X D Y
Apprentice Rates:							
				0-749 hours	\$30.22	\$38.32	\$46.42
				750-1,499 hours	\$31.57	\$40.34	\$49.12
				1,500-2,249 hours	\$32.92	\$42.37	\$51.82
				2,250-2,999 hours	\$34.27	\$44.40	\$54.52
				3,000-3,749 hours	\$35.62	\$46.42	\$57.22
				3,750-4,499 hours	\$36.97	\$48.44	\$59.92
				4,500 - 5,249 hours	\$38.32	\$50.47	\$62.62
				5,250 - 6,000 hours	\$39.67	\$52.50	\$65.32

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Classification Name Description	Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Carpenter					
Floor layer	CA1004FL 1/11/2008	\$32.52	\$43.45	\$54.38	H H H H H H D N
Apprentice Rates:					
		1st Year	\$23.78	\$30.34	\$36.90
		2nd Year	\$25.96	\$33.61	\$41.26
		3rd Year	\$28.15	\$36.90	\$45.64
		4th Year	\$29.24	\$38.53	\$47.82
Carpenter and pile driver	CA1004L 1/11/2008	\$37.01	\$49.79	\$62.57	H H H H H H D Y
Apprentice Rates:					
		1st Year	\$26.79	\$34.46	\$42.13
		2nd Year	\$29.34	\$38.29	\$47.23
		3rd Year	\$31.90	\$42.13	\$52.35
		4th Year	\$33.18	\$44.05	\$54.91
Cement Mason					
Cement Mason	PL16-7 5/30/2008	\$35.42	\$47.93	\$60.44	H H H H H H D Y
Apprentice Rates:					
		1st year	\$26.66	\$34.79	\$42.92
		2nd year	\$29.16	\$38.54	\$47.92
		3rd year	\$31.67	\$42.30	\$52.94
Drywall					
Drywall Taper and Finisher Double Time due after the 12th hour, Monday thru	PT-845-DF 3/27/2007	\$33.92	\$45.75	\$57.57	H H H H H H D N
Apprentice Rates:					
		0 - 1,000 hours	\$23.28	\$29.79	\$36.29
		1,001 - 2,000 hours	\$24.07	\$30.97	\$37.87
		2,001 to 3,000 hours	\$26.35	\$34.39	\$42.43
		3,001 to 4,000 hours	\$28.01	\$36.88	\$45.75
		4,001 to 5,000 hours	\$30.37	\$40.42	\$50.47
		5,001 to 6,000 hours	\$32.12	\$43.05	\$53.97

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Electrician

Road Way Electrical Work	EC-17		\$45.37	\$65.63	\$85.90	H H H H H H D Y
Double time due after 16 hours on any calendar day and all hours Sunday.						
	11/19/2007					

Apprentice Rates:

1st 6 months	\$29.17	\$41.34	\$53.50
2nd 6 months	\$31.19	\$44.36	\$57.54
3rd 6 months	\$33.21	\$47.40	\$61.58
4th 6 months	\$35.23	\$50.43	\$65.62
5th 6 months	\$37.25	\$53.46	\$69.66
6th 6 months	\$41.32	\$59.57	\$77.80

<u>Subdivision of county</u>	Williamston, Locke, Leroy, Wheatfield & White Oak					
Inside wireman	EC-252-IW		\$54.41	\$74.95	\$95.49	H H D H D D D D N
	6/13/2008					

Apprentice Rates:

1st Period	\$29.23	\$37.18	\$45.13
2nd Period	\$33.89	\$44.18	\$54.45
3rd Period	\$38.00	\$50.34	\$62.67
4th Period	\$42.10	\$56.49	\$70.87
5th Period	\$46.22	\$62.67	\$79.11
6th Period	\$50.33	\$68.83	\$87.33

<u>Subdivision of county</u>	Townships of Onondaga, Leslie, Stockbridge and Bunker Hill					
Sound & Communications Installer Technician	EC-252-SC		\$33.06	\$45.21	\$57.35	H H D H D D D D N
	10/3/2007					

Apprentice Rates:

Period 1	\$18.87	\$24.95	\$31.02
Period 2	\$20.08	\$26.76	\$33.44
Period 3	\$21.29	\$28.57	\$35.86
Period 4	\$22.51	\$30.41	\$38.30
Period 5	\$23.72	\$32.22	\$40.72
Period 6	\$26.15	\$35.87	\$45.58

<u>Subdivision of county</u>	Onondaga, Leslie, Stockbridge & Bunker Hill townships					
Inside Wireman	EC-665-IW		\$48.26	\$64.72	\$81.18	H H D H H H D D Y
	3/6/2007					

Apprentice Rates:

0-1000 hours	\$27.79	\$35.18	\$42.60
1000-2000 hours	\$29.44	\$37.68	\$45.90
2000-3500 hours	\$31.08	\$40.13	\$49.17
3500-5000 hours	\$34.38	\$45.09	\$55.78
5000-6500 hours	\$37.67	\$50.01	\$62.35
6500-8000 hours	\$40.96	\$54.96	\$68.94

<u>Subdivision of county</u>	Lansing, Meridian, Williamston, Locke, Delhi, Alaiedon, Wheatfield, Leroy, Aurelius, Vevay, Ingham, & White Oak townships
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Sound and Communication Journeyman	EC-665-SD 10/22/2007	\$35.22	\$47.14	\$59.06	H H D H H H D D Y
Apprentice Rates:					
1st period		\$20.16	\$26.11	\$32.07	
2nd period		\$21.65	\$28.20	\$34.76	
3rd period		\$23.15	\$30.30	\$37.94	
4th period		\$24.67	\$32.41	\$40.15	
5th period		\$26.18	\$34.52	\$42.86	
6th period		\$27.69	\$36.62	\$45.56	
<u>Subdivision of county</u> Lansing, Meridian, Williamston, Locke, Delhi, Alaiedon, Wheatfield, Leroy, Aurelius, Vevay, Ingham and White townships					
Elevator Constructor					
Elevator Constructor Mechanic	EL-85 1/22/2008	\$56.82		\$97.32	D D D D D D D Y
Apprentice Rates:					
1st year		\$38.60		\$60.88	
2nd year		\$42.64		\$68.96	
3rd year		\$44.67		\$73.02	
4th year		\$48.72		\$81.12	
Glazier					
Glazier	GL-826 7/3/2007	\$38.17	\$51.56	\$64.95	H H H H D D D Y
Apprentice Rates:					
1st 6 months		\$27.46	\$35.49	\$43.53	
2nd 6 months		\$28.80	\$37.51	\$46.21	
3rd 6 months		\$30.14	\$39.51	\$48.89	
4th 6 months		\$31.47	\$41.51	\$51.55	
5th 6 months		\$32.81	\$43.52	\$54.23	
6th 6 months		\$34.15	\$45.53	\$56.91	
7th 6 months		\$35.49	\$47.54	\$59.59	
8th 6 months		\$36.83	\$49.55	\$62.27	
Heat and Frost Insulator					
Spray Insulation	AS25S 3/5/2007	\$20.14	\$29.14		H H H H H H H N
Heat and Frost Insulator and Asbestos Worker					
Heat and Frost Insulator and Asbestos Worker	AS47 7/2/2008	\$42.75	\$56.74	\$70.72	H H H H H H D Y
Apprentice Rates:					
1st year		\$24.90	\$31.89	\$38.88	
2nd year		\$28.47	\$36.86	\$45.25	
3rd year		\$32.04	\$41.83	\$51.62	
4th year		\$35.61	\$46.80	\$57.99	
5th year		\$39.18	\$51.77	\$64.35	

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Classification Name Description	Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Ironworker					
Fence Erecting	IR-25-F 7/1/2008	\$42.16	\$62.99	\$83.81	H H D H H H D D Y
Siding, Glazing, Curtain Wall	IR-25-GZ2 3/28/2008	\$39.86	\$59.54	\$79.22	H H D H H H D D Y
Apprentice Rates:					
Level 1		\$24.72	\$36.54	\$48.34	
Level 2		\$26.69	\$39.49	\$52.28	
Level 3		\$28.65	\$42.43	\$56.20	
Level 4		\$30.62	\$45.39	\$60.14	
Level 5		\$32.59	\$48.34	\$64.08	
Level 6		\$34.56	\$51.29	\$68.02	
Pre-engineered Metal Work	IR-25-PE-Z3 5/8/2008	\$39.47	\$49.54	\$59.60	X X H X X X D Y
Apprentice Rates:					
1st Level		\$23.47	\$28.51	\$33.55	
2nd Level		\$25.12	\$30.85	\$36.58	
3rd Level		\$26.78	\$33.19	\$39.61	
4th Level		\$28.44	\$35.55	\$42.66	
5th Level		\$30.10	\$37.90	\$45.70	
6th Level		\$31.36	\$39.65	\$47.93	
Reinforced Iron Work	IR-25-RF 6/2/2008	\$50.06	\$74.82	\$99.58	H H D H D D D N
Apprentice Rates:					
Level 1		\$30.85	\$45.71	\$60.56	
Level 2		\$33.33	\$49.43	\$65.52	
Level 3		\$35.79	\$53.11	\$70.44	
Level 4		\$38.29	\$56.87	\$75.44	
Level 5		\$40.75	\$60.55	\$80.36	
Level 6		\$43.23	\$64.28	\$85.32	
Rigging Work	IR-25-RIG 6/2/2008	\$55.48	\$82.99	\$110.49	H H H H H H D N
Apprentice Rates:					
Level 1&2		\$31.46	\$46.59	\$61.72	
Level 3		\$34.21	\$50.72	\$67.22	
Level 4		\$36.95	\$54.83	\$72.70	
Level 5		\$39.71	\$58.97	\$78.22	
Level 6		\$42.46	\$63.09	\$83.72	
Decking	IR-25-SD 10/4/2007	\$46.40	\$69.32	\$92.23	H H D H H H D D Y

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Classification Name Description	Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Structural, ornamental, conveyor, welder and pre-cast	IR-25-STR 6/2/2008	\$55.61	\$83.12	\$110.62	H H D H H H D D Y
Apprentice Rates:					
Levels 1 & 2		\$31.46	\$46.59	\$61.72	
Level 3		\$34.21	\$50.72	\$67.22	
Level 4		\$36.95	\$54.83	\$72.70	
Level 5		\$39.71	\$58.97	\$78.22	
Level 6		\$42.46	\$63.09	\$83.72	
Level 7		\$45.20	\$67.20	\$89.20	
Level 8		\$47.96	\$71.34	\$94.72	
Industrial Door erection & construction	IR-25-STR-D 3/28/2008	\$35.72	\$47.34	\$58.96	H H D H H H D D Y
Laborer					
Journeyman - building and heavy construction craft laborer, portable concrete mixer operator, air, electric or gasoline tool operator, hot dope carrier, tar kettle tender, gasoline vibrators, concrete gas buggies, concrete saw, signal person and top person on sewer, caisson construction (open cut work), concrete shoveler, car pusher, and bottom person (on sewer work). Demolition laborer, 3" pumps & below, jobsite clean-up, deep cleaning, jackhammer operators, burner, crock layer, caisson worker, tunnel mucker and tunnel miner, welder, mortar mixer, scaffold builder, forklift operator (masonry only), helper and tender on work customarily performed by laborers and all laborers working for plasterer tenders.	L499L 6/9/2008	\$31.99	\$42.58	\$53.16	H H H H H H H D Y
All hours worked on Saturday except as an increment					
Apprentice Rates:					
0-1,000 hours		\$26.70	\$34.64	\$42.58	
1,001-2,000 hours		\$27.76	\$36.23	\$44.70	
2,001-3,000 hours		\$28.81	\$37.80	\$46.80	
3,001-4,000 hours		\$30.93	\$40.98	\$51.04	
Mason Tender	L499M 6/9/2008	\$32.05	\$42.20	\$52.85	H H H H H H H D Y
Apprentice Rates:					
0-1,000 hours		\$26.73	\$34.22	\$42.21	
1,001-2,000 hours		\$27.79	\$35.81	\$44.33	
2,001-3,000 hours		\$28.85	\$37.40	\$46.45	
3,001-4,000 hours		\$30.99	\$40.61	\$50.73	

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Laborer - Hazardous					
Class A Laborer - performing work in conjunction with site preparation and other preliminary work prior to actual removal, handling, or containment of hazardous waste substances not requiring use of personal protective equipment required by state or federal regulations; or a laborer performing work in conjunction with the removal, handling, or containment of hazardous waste substances when use of personal protective equipment level "D" is required.	LHAZ-Z6-A 10/16/2007	\$29.82	\$42.45	\$55.08	H H H H H H D Y
Apprentice Rates:					
			\$25.08	\$35.34	\$45.60
			\$26.03	\$36.77	\$47.50
			\$26.98	\$38.19	\$49.40
			\$28.87	\$41.03	\$53.18
Class B Laborer - performing work in conjunction with the removal, handling, or containment of hazardous waste substances when the use of personal protective equipment levels "A", "B" or "C" is required.	LHAZ-Z6-B 10/16/2007	\$30.82	\$43.95	\$57.08	H H H H H H D Y
Apprentice Rates:					
			\$25.83	\$36.47	\$47.10
			\$26.83	\$37.97	\$49.10
			\$27.83	\$39.47	\$51.10
			\$29.82	\$42.45	\$55.08
Laborer Underground - Tunnel, Shaft & Caisson					
Class I - Tunnel, shaft and caisson laborer, dump man, shanty man, hog house tender, testing man (on gas), and watchman.	LAUCT-Z2-1 9/24/2007	\$31.47	\$42.57	\$53.67	H H H H H H D Y
Apprentice Rates:					
			\$26.43	\$35.02	\$43.59
			\$27.44	\$36.53	\$45.61
			\$28.44	\$38.03	\$47.61
			\$30.46	\$41.06	\$51.65
Class II - Manhole, headwall, catch basin builder, bricklayer tender, mortar man, material mixer, fence erector, and guard rail builder	LAUCT-Z2-2 9/24/2007	\$31.56	\$42.71	\$53.85	H H H H H H D Y
Apprentice Rates:					
			\$26.50	\$35.12	\$43.73
			\$27.51	\$36.64	\$45.75
			\$28.52	\$38.15	\$47.77
			\$30.55	\$41.20	\$51.83

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Class III - Air tool operator (jack hammer man, bush hammer man and grinding man), first bottom man, second bottom man, cage tender, car pusher, carrier man, concrete man, concrete form man, concrete repair man, cement invert laborer, cement finisher, concrete shoveler, conveyor man, floor man, gasoline and electric tool operator, gunnite man, grout operator, welder, heading dinky man, inside lock tender, pea gravel operator, pump man, outside lock tender, scaffold man, top signal man, switch man, track man, tugger man, utility man, vibrator man, winch operator, pipe jacking man, wagon drill and air track operator and concrete saw operator (under 40	LAUCT-Z2-3 9/24/2007	\$31.66	\$42.86	\$54.05	H H H H H H D Y
Apprentice Rates:					
		0-1,000 work hours	\$26.57	\$35.22	\$43.87
		1,001-2,000 work hours	\$27.59	\$36.76	\$45.91
		2,001-3,000 work hours	\$28.61	\$38.28	\$47.95
		3,001-4,000 work hours	\$30.64	\$41.33	\$52.01
Class IV - Tunnel, shaft and caisson mucker, bracer man, liner plate man, long haul dinky driver and well point	LAUCT-Z2-4 9/24/2007	\$31.82	\$43.10	\$54.37	H H H H H H D Y
Apprentice Rates:					
		0-1,000 work hours	\$26.69	\$35.40	\$44.11
		1,001-2,000 work hours	\$27.72	\$36.95	\$46.17
		2,001-3,000 work hours	\$28.74	\$38.48	\$48.21
		3,001-4,000 work hours	\$30.79	\$41.56	\$52.31
Class V - Tunnel, shaft and caisson miner, drill runner, keyboard operator, power knife operator, reinforced steel or mesh man (e.g. wire mesh, steel mats, dowel bars)	LAUCT-Z2-5 9/24/2007	\$32.08	\$43.49	\$54.89	H H H H H H D Y
Apprentice Rates:					
		0-1,000 work hours	\$26.88	\$35.69	\$44.49
		1,001-2,000 work hours	\$27.92	\$37.25	\$46.57
		2,001-3,000 work hours	\$28.96	\$38.81	\$48.65
		3,001-4,000 work hours	\$31.04	\$41.93	\$52.81
Class VI - Dynamite man and powder man.	LAUCT-Z2-6 9/24/2007	\$32.39	\$43.95	\$55.51	H H H H H H D Y
Apprentice Rates:					
		0-1,000 work hours	\$27.12	\$36.05	\$44.97
		1,001-2,000 work hours	\$28.17	\$37.62	\$47.07
		2,001-3,000 work hours	\$29.23	\$39.22	\$49.19
		3,001-4,000 work hours	\$31.34	\$42.38	\$53.41

Official Request 1114
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Classification Name Description	Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Class VII - Restoration laborer, seeding, sodding, planting, cutting, mulching and topsoil grading and the restoration of property such as replacing mail boxes, wood chips, planter boxes and flagstones.	LAUCT-Z2-7 9/24/2007	\$24.66	\$32.36	\$40.05	H H H H H H D Y
Apprentice Rates:					
		0-1,000 work hours	\$21.32	\$27.35	\$33.37
		1,001-2,000 work hours	\$21.99	\$28.36	\$34.71
		2,001-3,000 work hours	\$22.66	\$29.36	\$36.05
		3,001-4,000 work hours	\$23.99	\$31.36	\$38.71
Landscape Laborer					
Landscape Specialist includes air, gas, and diesel equipment operator, lawn sprinkler installer on landscaping work where seeding, sodding, planting, cutting, trimming, backfilling, rough grading or maintenance of landscape	LLAN-Z2-A 7/1/2008	\$24.65	\$33.97	\$43.28	X X H X X X H D Y
All work pertaining to landscaping where seeding, sodding, planting, cutting, trimming, backfilling, rough grading or maintaining of landscape projects occurs which may include small power tool operator, lawn sprinkler installer helper, material mover, truck driver.	LLAN-Z2-B 7/1/2008	\$20.45	\$27.67	\$34.88	X X H X X X H D Y
Operating Engineer					
Class C- Regular equipment operator, crane, stiff leg derrick, scraper dozer, grader, front end loader, hoist, job mechanic, head grease man, concrete pump truck and hydro excavators.	EN-324-BH2C 5/20/2008	\$43.85	\$57.37	\$70.89	H H H H H H D Y
Apprentice Rates:					
		1st 6 months	\$35.39	\$44.86	\$54.32
		2nd 6 months	\$36.74	\$46.88	\$57.02
		3rd 6 months	\$38.09	\$48.90	\$59.72
		4th 6 months	\$39.44	\$50.93	\$62.42
		5th 6 months	\$40.80	\$52.97	\$65.14
		6th 6 months	\$42.15	\$55.00	\$67.84
Class D- Air tugger (single drum), material hoist, boiler operator, sweeping machine, winch truck, Bob Cat and similar equipment, elevators (when operated by an operating engineer), and fork truck over 20' lift.	EN-324-BH2D 5/20/2008	\$39.05	\$50.17	\$61.29	H H H H H H D Y
Class E- Pump 6" or over, well points, freeze systems, boom truck (non-swinging), end dumps and laser/power screed, concrete wire saw 20 h.p. and over and brokk concrete breaker.	EN-324-BH2E 5/20/2008	\$38.45	\$49.27	\$60.09	H H H H H H D Y

Official Request 1114
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Classification Name Description	Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Class F- Air compressor, welder, generators, conveyors, pumps under 6", Grease man, and fork truck 20' or less lift.	EN-324-BH2F 5/20/2008	\$36.00	\$45.60	\$55.19	H H H H H H D Y
Class G- Oiler, fireman and heater operator.	EN-324-BH2G 5/20/2008	\$34.30	\$43.05	\$51.79	H H H H H H D Y
Class A- Crane w/ main Boom & Jib 220' or longer	EN-OSA 5/20/2008	\$45.20	\$59.40	\$73.59	H H H H H H D Y
Class A- Crane w/ main Boom & Jib 300' or longer	EN-OSA3 5/20/2008	\$46.70	\$61.65	\$76.59	H H H H H H D Y
Class A- Crane w/ main Boom & Jib 400' or longer	EN-OSA4 5/20/2008	\$48.20	\$63.90	\$79.59	H H H H H H D Y
Class B- Crane Operator with main boom and jib 140' or longer, tower cranes, gantry crane, whirley derrick.	EN-OSB 5/20/2008	\$44.95	\$59.02	\$73.09	H H H H H H D Y
Operating Engineer - Marine Construction					
Diver/Wet Tender, Engineer (hydraulic dredge)	GLF-1 1/8/2008	\$51.76	\$67.91	\$84.06	X X H H H H D Y

Holidays paid at \$100.21 per hour

<u>Subdivision of county</u> all Great Lakes, islands therein, & connecting & tributary waters					
Crane/Backhoe Operator, Mechanic/Welder, Assistant Engineer (hydraulic dredge), Leverman (hydraulic dredge), Diver Tender	GLF-2 1/8/2008	\$50.26	\$65.66	\$81.06	X X H H H H D Y

Holidays paid \$96.46 per hour

<u>Subdivision of county</u> All Great Lakes, islands therein, & connecting & tributary waters					
Deck Equipment Operator, Machineryman, Maintenance of Crane (over 50 ton capacity) or Backhoe (115,000 lbs. or more), Tug/Launch Operator, Loader, Dozer and like equipment on Barge, Breakwater Wall, Slip/Doc or Scow, Deck Machinery	GLF-3 1/8/2008	\$46.91	\$60.64	\$74.36	X X H H H H D Y

Holidays paid at \$88.08 per hour

<u>Subdivision of county</u> All Great Lakes, islands therein, & connecting & tributary waters					
Deck Equipment Operator, (Machineryman/Fireman), (4 equipment units or more), Deck Hand, Deck Engineer, & Crane Maintenance 50 ton capacity and under or Backhoe weighing 115,000 lbs or less, Assistant Tug Operator	GLF-4 1/8/2008	\$42.26	\$53.66	\$65.06	X X H H H H D Y

Holidays paid at \$76.46 per hour

Subdivision of county All Great Lakes, islands therein, & connecting & tributary waters

Official Request 1114
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 Project Description: MECHANICAL, ELECTRICAL & PLUMBING
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 County: Statewide

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Classification Name Description	Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Operating Engineer Hazardous Waste Class I					
Level A - Fully encapsulating chemical resistant suit w/ pressure demand, full face piece SCBA or pressure demand supplied air respirator w/ escape SCBA. The highest available level of respiratory, skin and eye	EN-324-HWCI-Z2A 3/25/2008	\$45.63	\$60.54	\$75.45	H H H H H H D Y
Apprentice Rates:					
1st 6 months		\$36.58	\$47.01	\$57.45	
2nd 6 months		\$38.08	\$49.27	\$60.45	
3rd 6 months		\$39.56	\$51.49	\$63.41	
4th 6 months		\$41.06	\$53.74	\$66.41	
5th 6 months		\$42.55	\$55.97	\$69.39	
6th 6 months		\$44.03	\$58.19	\$72.35	
Level B & C protection. B - Pressure demand, full face SCBA or pressure demand supplied air respirator w/ escape SCBA w/chemical resistant clothing. C - Full face piece, air purifying canister-equipped respirator w/chemical resistant clothing.	EN-324-HWCI-Z2B 3/25/2008	\$44.68	\$59.12	\$73.55	H H H H H H D Y
Apprentice Rates:					
1st 6 months		\$35.92	\$46.03	\$56.13	
2nd 6 months		\$37.36	\$48.18	\$59.01	
3rd 6 months		\$38.80	\$50.35	\$61.89	
4th 6 months		\$40.25	\$52.52	\$64.79	
5th 6 months		\$41.69	\$54.68	\$67.67	
6th 6 months		\$43.13	\$56.84	\$70.55	
Level D - Coveralls, safety boots, glasses or chemical splash goggles and hard hats.	EN-324-HWCI-Z2D 3/25/2008	\$43.38	\$57.17	\$70.95	H H H H H H D Y
Apprentice Rates:					
1st 6 months		\$35.01	\$44.66	\$54.31	
2nd 6 months		\$36.39	\$46.73	\$57.07	
3rd 6 months		\$37.77	\$48.80	\$59.83	
4th 6 months		\$39.14	\$50.86	\$62.57	
5th 6 months		\$40.52	\$52.93	\$65.33	
6th 6 months		\$41.90	\$55.00	\$68.09	

Official Request 1114
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 Project Description: MECHANICAL, ELECTRICAL & PLUMBING
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 County: Ingham

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Classification Name Description	Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Level D When Capping Landfill Coveralls, safety boots, glasses or chemical splash goggles and hard hats.	EN-324-HWCI-Z2DCL 3/25/2008	\$43.13	\$56.79	\$70.45	H H H H H H H D Y
Apprentice Rates:					
1st 6 months		\$34.83	\$44.39	\$53.95	
2nd 6 months		\$36.20	\$46.45	\$56.69	
3rd 6 months		\$37.57	\$48.51	\$59.43	
4th 6 months		\$38.94	\$50.56	\$62.17	
5th 6 months		\$40.30	\$52.60	\$64.89	
6th 6 months		\$41.67	\$54.66	\$67.63	
Operating Engineer Hazardous Waste Class II					
Level A - Fully encapsulating chemical resistant suit w/ pressure demand, full face piece SCBA or pressure demand supplied air respirator w/ escape SCBA. The highest available level of respiratory, skin and eye	EN-324-HWCII-Z2A 5/9/2008	\$41.23	\$53.94	\$66.65	H H H H H H H D Y
Level B & C protection. B - Pressure demand, full face SCBA or pressure demand supplied air respirator w/ escape SCBA w/chemical resistant clothing. C - Full face piece, air purifying canister-equipped respirator w/chemical resistant clothing.	EN-324-HWCII-Z2B 3/25/2008	\$40.29	\$52.53	\$64.77	H H H H H H H D Y
Level D - Coveralls, safety boots, glasses or chemical splash goggles and hard hats.	EN-324-HWCII-Z2D 3/25/2008	\$38.99	\$50.58	\$62.17	H H H H H H H D Y
Level D When Capping Landfill Coveralls, safety boots, glasses or chemical splash goggles and hard hats.	EN-324-HWCII-Z2DCL 3/25/2008	\$38.74	\$50.21	\$61.67	H H H H H H H D Y
Operating Engineer Hazardous Waste Crane w/ Boom & Jib leads 140' or longer					
Level A - Fully encapsulating chemical resistant suit w/ pressure demand, full face piece SCBA or pressure demand supplied air respirator w/ escape SCBA. The highest available level of respiratory, skin and eye	EN-324-HW140-Z2A 3/25/2008	\$48.28	\$64.52	\$80.75	H H H H H H H D Y
Level B & C protection. B - Pressure demand, full face SCBA or pressure demand supplied air respirator w/ escape SCBA w/chemical resistant clothing. C - Full face piece, air purifying canister-equipped respirator w/chemical resistant clothing.	EN-324-HW140-Z2B 3/25/2008	\$47.22	\$62.93	\$78.63	H H H H H H H D Y
Level D - Coveralls, safety boots, glasses or chemical splash goggles and hard hats.	EN-324-HW140-Z2D 3/25/2008	\$46.03	\$61.14	\$76.25	H H H H H H H D Y
Level D When Capping Landfill Coveralls, safety boots, glasses or chemical splash goggles and hard hats.	EN-324-HW140-Z2DCL 3/25/2008	\$45.78	\$60.77	\$75.75	H H H H H H H D Y

Official Request 1114
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Classification Name Description	Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Operating Engineer Hazardous Waste Crane w/ Boom & Jib leads 220' or longer					
Level A - Fully encapsulating chemical resistant suit w/ pressure demand, full face piece SCBA or pressure demand supplied air respirator w/ escape SCBA. The highest available level of respiratory, skin and eye	EN-324-HW220-Z2A 3/25/2008	\$48.58	\$64.97	\$81.35	H H H H H H H D Y
Level B & C protection. B - Pressure demand, full face SCBA or pressure demand supplied air respirator w/ escape SCBA w/chemical resistant clothing. C - Full face piece, air purifying canister-equipped respirator w/chemical resistant clothing.	EN-324-HW220-Z2B 3/25/2008	\$47.54	\$63.41	\$79.27	H H H H H H H D Y
Level D - Coveralls, safety boots, glasses or chemical splash goggles and hard hats.	EN-324-HW220-Z2D 3/25/2008	\$46.33	\$61.59	\$76.85	H H H H H H H D Y
Level D When Capping Landfill Coveralls, safety boots, glasses or chemical splash goggles and hard hats.	EN-324-HW220-Z2DCL 3/25/2008	\$46.08	\$61.22	\$76.35	H H H H H H H D Y
Operating Engineer Hazardous Waste Regular Crane, Job Mechanic, Dragline Operator, Boom Truck Operator, Power Shovel Operator and Concrete Pump with boom					
Level A - Fully encapsulating chemical resistant suit w/ pressure demand, full face piece SCBA or pressure demand supplied air respirator w/ escape SCBA. The highest available level of respiratory, skin and eye	EN-324-HWRC-Z2A 3/25/2008	\$46.60	\$62.00	\$77.39	H H H H H H H D Y
Operating Engineer Hazardous Waste Regular Crane, Job Mechanic, Dragline Operator, Boom Truck Operator, Power Shovel Operator and Concrete Pump with Boom Operator					
Level B & C protection. B - Pressure demand, full face SCBA or pressure demand supplied air respirator w/ escape SCBA w/chemical resistant clothing. C - Full face piece, air purifying canister-equipped respirator w/chemical resistant clothing.	EN-324-HWRC-Z2B 3/25/2008	\$45.65	\$60.57	\$75.49	H H H H H H H D Y
Level D - Coveralls, safety boots, glasses or chemical splash goggles and hard hats.	EN-324-HWRC-Z2D 3/25/2008	\$44.35	\$58.62	\$72.89	H H H H H H H D Y
Level D When Capping Landfill Coveralls, safety boots, glasses or chemical splash goggles and hard hats.	EN-324-HWRC-Z2DCL 3/25/2008	\$44.10	\$58.25	\$72.39	H H H H H H H D Y
Operating Engineer Steel Work					
Forklift, 1 Drum Hoist	EN-324-ef 6/6/2008	\$52.96	\$70.75	\$88.53	H H D H H H D D Y
Crane w/ 120' boom or longer	EN-324-SW120 6/6/2008	\$55.01	\$73.82	\$92.63	H H D H H H D D Y

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Crane w/ 120' boom or longer w/ Oiler	EN-324-SW120-O 6/6/2008	\$56.01	\$75.32	\$94.63	H H D H H H D D Y
Crane w/ 140' boom or longer	EN-324-SW140 6/6/2008	\$56.19	\$75.59	\$94.99	H H D H H H D D Y
Crane w/ 140' boom or longer W/ Oiler	EN-324-SW140-O 6/6/2008	\$57.19	\$77.09	\$96.99	H H D H H H D D Y
Boom & Jib 220' or longer	EN-324-SW220 6/6/2008	\$56.46	\$76.00	\$95.53	H H D H H H D D Y
Crane w/ 220' boom or longer w/ Oiler	EN-324-SW220-O 6/6/2008	\$57.46	\$77.50	\$97.53	H H D H H H D D Y
Boom & Jib 300' or longer	EN-324-SW300 6/6/2008	\$57.96	\$78.25	\$98.53	H H D H H H D D Y
Crane w/ 300' boom or longer w/ Oiler	EN-324-SW300-O 6/6/2008	\$58.96	\$79.75	\$100.53	H H D H H H D D Y
Boom & Jib 400' or longer	EN-324-SW400 6/6/2008	\$59.46	\$80.50	\$101.53	H H D H H H D D Y
Crane w/ 400' boom or longer w/ Oiler	EN-324-SW400-O 6/6/2008	\$60.46	\$82.00	\$103.53	H H D H H H D D Y
Crane Operator, Job Mechanic, 3 Drum Hoist &	EN-324-SWCO 6/6/2008	\$54.65	\$73.28	\$91.91	H H D H H H D D Y
Apprentice Rates:					
		0-999 hours	\$42.03	\$54.90	\$67.77
		1,000-1,999 hours	\$43.87	\$57.66	\$71.45
		2,000-2,999 hours	\$45.71	\$60.42	\$75.13
		3,000-3,999 hours	\$47.54	\$63.17	\$78.79
		4,000-4,999 hours	\$49.38	\$65.93	\$82.47
		5,000 hours	\$51.22	\$68.69	\$86.15
Crane w/ Oiler	EN-324-SWCO-O 6/6/2008	\$55.65	\$74.78	\$93.91	H H D H H H D D Y
Compressor or Welder Operator	EN-324-SWCW 6/6/2008	\$47.20	\$62.11	\$77.01	H H D H H H D D Y
Hoisting Operator, 2 Drum Hoist, & Rubber Tire Backhoe	EN-324-SWHO 6/6/2008	\$54.01	\$72.32	\$90.63	H H D H H H D D Y
Oiler	EN-324-SWO 6/6/2008	\$45.79	\$59.99	\$74.19	H H D H H H D D Y
Tower Crane & Derrick where work is 50' or more above first level	EN-324-SWTD50 6/6/2008	\$55.74	\$74.92	\$94.09	H H D H H H D D Y

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Tower Crane & Derrick 50' or more w/ Oiler where work station is 50' or more above first level	EN-324-SWTD50-O 6/6/2008	\$56.74	\$76.42	\$96.09	H H D H H H D D Y
Operating Engineer Underground Class I Equipment	EN-324A2-UC1 10/8/2007	\$43.13	\$56.77	\$70.40	H H H H H H H D Y
Apprentice Rates:					
0-999 hours		\$34.85	\$44.40	\$53.94	
1,000-1,999 hours		\$36.21	\$46.44	\$56.66	
2,000-2,999 hours		\$37.58	\$48.50	\$59.40	
3,000-3,999 hours		\$38.93	\$50.51	\$62.10	
4,000-4,999 hours		\$40.30	\$52.57	\$64.84	
5,000-5,999 hours		\$41.66	\$54.61	\$67.56	
Class II Equipment	EN-324A2-UC2 10/8/2007	\$38.24	\$49.43	\$60.62	H H H H H H H D Y
Class III Equipment	EN-324A2-UC3 10/8/2007	\$37.74	\$48.68	\$59.62	H H H H H H H D Y
Class IV Equipment	EN-324A2-UC4 10/8/2007	\$37.46	\$48.26	\$59.06	H H H H H H H D Y
Painter Painter	PT-845-BR 3/27/2007	\$30.09	\$40.46	\$50.83	H H H H H H H D Y
Apprentice Rates:					
1st period		\$20.76	\$26.47	\$32.17	
2nd period		\$21.79	\$28.01	\$34.23	
3rd period		\$23.45	\$30.50	\$37.55	
4th period		\$24.91	\$32.69	\$40.47	
5th period		\$26.98	\$35.79	\$44.61	
6th period		\$29.05	\$38.90	\$48.75	
Plasterer Plasterer	PL16-2 5/30/2008	\$36.42	\$49.61	\$62.79	H H H H H H H D N
Apprentice Rates:					
1st year		\$27.19	\$35.76	\$44.33	
2nd year		\$29.83	\$39.72	\$49.61	
3rd year		\$32.46	\$43.67	\$54.87	

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Classification Name Description	Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Plumber & Pipefitter					
Plumber & Pipefitter	PL-333-RI 9/6/2007	\$47.52	\$71.08	\$94.64	H H H H H H D Y
Apprentice Rates:					
1st 6 months		\$30.01	\$44.82	\$59.62	
2nd 6 months		\$31.61	\$47.22	\$62.82	
3rd 6 months		\$33.20	\$49.60	\$66.00	
4th 6 months		\$34.79	\$51.99	\$69.18	
5th 6 months		\$36.38	\$54.38	\$72.36	
6th 6 months		\$37.97	\$56.76	\$75.54	
7th 6 months		\$39.56	\$59.14	\$78.72	
8th 6 months		\$41.15	\$61.53	\$81.90	
9th 6 months		\$42.75	\$63.93	\$85.10	
10th 6 months		\$44.34	\$66.32	\$88.28	
Roofer					
Commercial Roofer	RO-70-Z2 3/28/2008	\$34.95	\$46.38	\$57.80	X X H H H H D Y
Apprentice Rates:					
1st Class		\$20.63	\$25.35	\$30.07	
2nd Class		\$22.56	\$28.19	\$33.82	
3rd Class		\$24.53	\$31.12	\$37.70	
4th Class		\$26.36	\$33.83	\$41.31	
5th Class		\$28.21	\$36.56	\$44.90	
6th Class		\$30.03	\$39.23	\$48.43	
Sheet Metal Worker					
Sheet Metal Worker	SHM-7-1 5/24/2007	\$43.12	\$56.18	\$69.23	H H H H D D D Y
Apprentice Rates:					
First Year		\$23.41	\$29.94	\$36.47	
Second Year		\$28.14	\$35.97	\$43.81	
Third Year		\$35.29	\$44.43	\$53.57	
Fourth Year		\$37.90	\$48.35	\$58.79	

Official Request 1114
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Official 2008 Prevailing Wage Rates for State Funded Projects

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Classification Name Description	Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Sprinkler Fitter					
Sprinkler Fitter	SP 669 9/25/2007	\$45.11	\$60.84	\$76.57	H H H H H H D Y
Apprentice Rates:					
Class 1 & 2		\$22.24	\$30.11	\$37.97	
Class 3		\$27.85	\$36.50	\$45.15	
Class 4		\$29.43	\$38.87	\$48.31	
Class 5		\$34.10	\$44.33	\$54.55	
Class 6		\$35.67	\$46.68	\$57.69	
Class 7		\$37.25	\$49.05	\$60.85	
Class 8		\$38.82	\$51.41	\$63.99	
Class 9		\$40.39	\$53.76	\$67.13	
Class 10		\$41.96	\$56.11	\$70.27	
Tile, Terrazzo and Mosaic Finisher					
Finisher	BR9-31-TF 8/17/2007	\$27.62	\$36.70	\$45.77	H H H X X X D Y
Apprentice Rates:					
0-749 hours		\$21.27	\$27.17	\$33.07	
750-1,499 hours		\$22.17	\$28.52	\$34.87	
1,500-2,249 hours		\$23.08	\$29.89	\$36.69	
2,250-2,999 hours		\$23.99	\$31.25	\$38.51	
3,000-3,749 hours		\$24.90	\$32.61	\$40.33	
3,750-4,499 hours		\$25.81	\$33.98	\$42.15	
Setter					
Setter	BR9-31-TS 8/17/2007	\$32.99	\$43.99	\$54.99	H H H X X X D Y
Apprentice Rates:					
0-749 hours		\$25.29	\$32.44	\$39.59	
750-1499 hours		\$26.39	\$34.09	\$41.79	
1500-2249 hours		\$27.49	\$35.74	\$43.99	
2250-2999 hours		\$28.59	\$37.39	\$46.19	
3000-3749 hours		\$29.69	\$39.04	\$48.39	
3750-4499 hours		\$30.79	\$40.69	\$50.59	
Truck Driver					
of all trucks of 8 cubic yd capacity or over	TM-RB2 7/24/2007	\$34.76	\$36.44		H H H H H H H Y
of all trucks of 8 cubic yard capacity or less	TM-RB2A 7/24/2007	\$34.66	\$36.29		H H H H H H H Y
on euclid type equipment	TM-RB2B 7/24/2007	\$34.91	\$36.66		H H H H H H H Y

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Classification Name Description	Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Underground Laborer Open Cut, Class I					
Construction Laborer	LAUC-Z3-1	\$29.41	\$39.48	\$49.55	H H H H H H D Y
	9/6/2007				
Apprentice Rates:					
	0-1,000 work hours	\$24.88	\$32.69	\$40.49	
	1,001-2,000 work hours	\$25.79	\$34.06	\$42.31	
	2,001-3,000 work hours	\$26.69	\$35.40	\$44.11	
	3,001-4,000 work hours	\$28.50	\$38.12	\$47.73	
Underground Laborer Open Cut, Class II					
Mortar and material mixer, concrete form man, signal man, well point man, manhole, headwall and catch basin builder, guard rail builders, headwall, seawall, breakwall, dock builder and fence erector.	LAUC-Z3-2	\$29.55	\$39.69	\$49.83	H H H H H H D Y
	9/6/2007				
Apprentice Rates:					
	0-1,000 work hours	\$24.99	\$32.86	\$40.71	
	1,001-2,000 work hours	\$25.90	\$34.22	\$42.53	
	2,001-3,000 work hours	\$26.81	\$35.58	\$44.35	
	3,001-4,000 work hours	\$28.64	\$38.33	\$48.01	
Underground Laborer Open Cut, Class III					
Air, gasoline and electric tool operator, vibrator operator, drillers, pump man, tar kettle operator, bracers, rodder, reinforced steel or mesh man (e.g. wire mesh, steel mats, dowel bars, etc.), cement finisher, welder, pipe jacking and boring man, wagon drill and air track operator and concrete saw operator (under 40 h.p.), windlass and tugger man, and directional boring man.	LAUC-Z3-3	\$29.67	\$39.87	\$50.07	H H H H H H D Y
	9/6/2007				
Apprentice Rates:					
	0-1,000 work hours	\$25.08	\$32.99	\$40.89	
	1,001-2,000 work hours	\$26.00	\$34.37	\$42.73	
	2,001-3,000 work hours	\$26.91	\$35.74	\$44.55	
	3,001-4,000 work hours	\$28.75	\$38.50	\$48.23	
Underground Laborer Open Cut, Class IV					
Trench or excavating grade man.	LAUC-Z3-4	\$29.72	\$39.95	\$50.17	H H H H H H D Y
	9/6/2007				
Apprentice Rates:					
	0-1,000 work hours	\$25.12	\$33.05	\$40.97	
	1,001-2,000 work hours	\$26.04	\$34.43	\$42.81	
	2,001-3,000 work hours	\$26.96	\$35.81	\$44.65	
	3,001-4,000 work hours	\$28.80	\$38.57	\$48.33	

Official Request 1114
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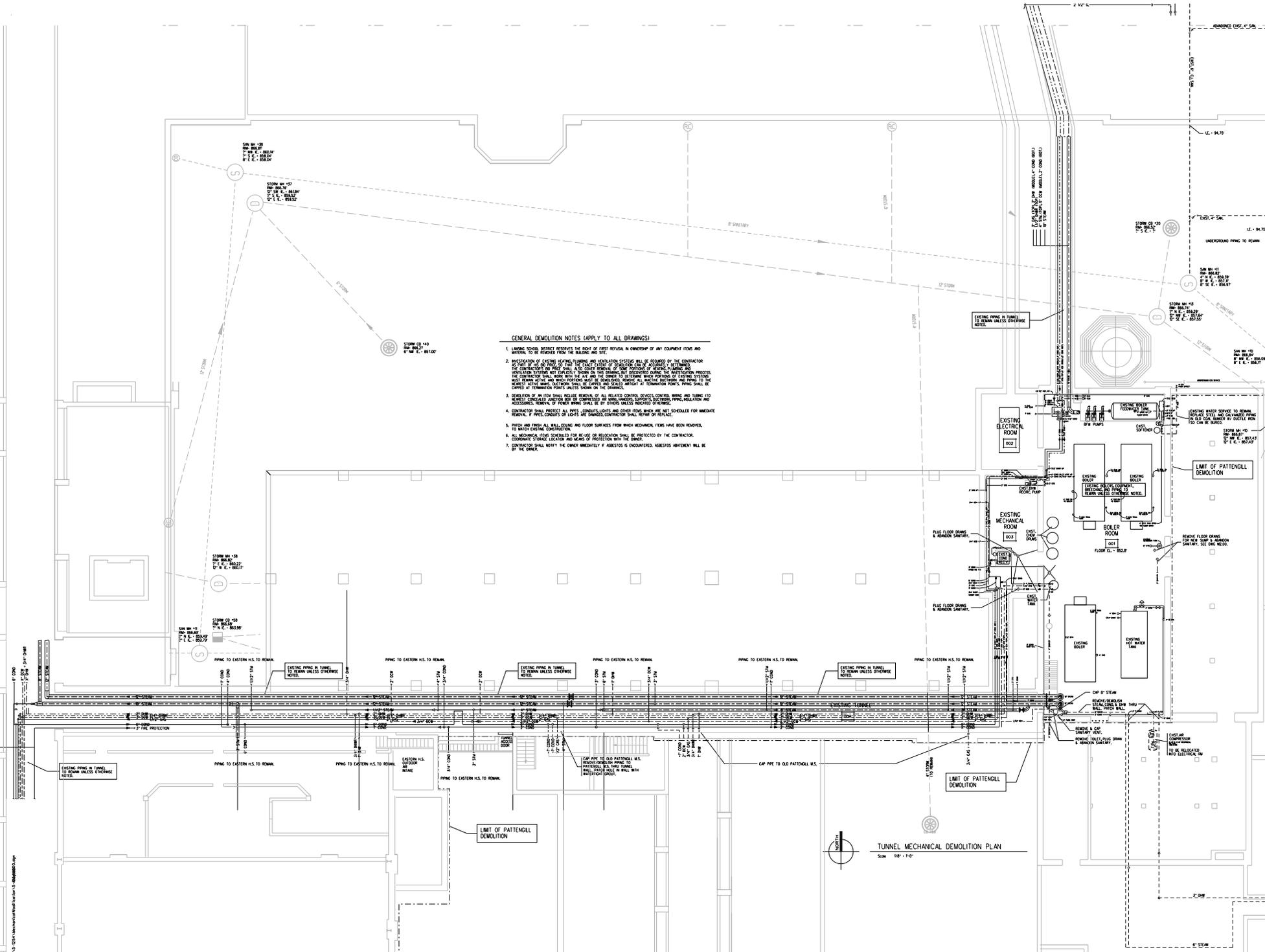
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Classification Name Description	Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Underground Laborer Open Cut, Class V					
Pipe Layer	LAUC-Z3-5	\$29.86	\$40.16	\$50.45	H H H H H H D Y
	9/6/2007				
Apprentice Rates:					
	0-1,000 work hours	\$25.22	\$33.20	\$41.17	
	1,001-2,000 work hours	\$26.15	\$34.60	\$43.03	
	2,001-3,000 work hours	\$27.08	\$35.99	\$44.89	
	3,001-4,000 work hours	\$28.93	\$38.76	\$48.59	
Underground Laborer Open Cut, Class VI					
Grouting man, top man assistant, audio visual television operations and all other operations in connection with closed circuit television inspection, pipe cleaning and pipe relining work and the installation & repair of water service pipe & appurtenances	LAUC-Z3-6	\$27.16	\$36.11	\$45.05	H H H H H H D Y
	9/6/2007				
Apprentice Rates:					
	0-1,000 work hours	\$23.20	\$30.17	\$37.13	
	1,001-2,000 work hours	\$23.99	\$31.36	\$38.71	
	2,001-3,000 work hours	\$24.78	\$32.54	\$40.29	
	3,001-4,000 work hours	\$26.37	\$34.92	\$43.47	
Underground Laborer Open Cut, Class VII					
Restoration laborer, seeding, sodding, planting, cutting, mulching and topsoil grading and the restoration of property such as replacing mail boxes, wood chips, planter boxes, flagstones etc.	LAUC-Z3-7	\$24.31	\$31.83	\$39.35	H H H H H H D Y
	9/6/2007				
Apprentice Rates:					
	0-1,000 work hours	\$21.06	\$26.96	\$32.85	
	1,001-2,000 work hours	\$21.71	\$27.94	\$34.15	
	2,001-3,000 work hours	\$22.36	\$28.91	\$35.45	
	3,001-4,000 work hours	\$23.66	\$30.86	\$38.05	

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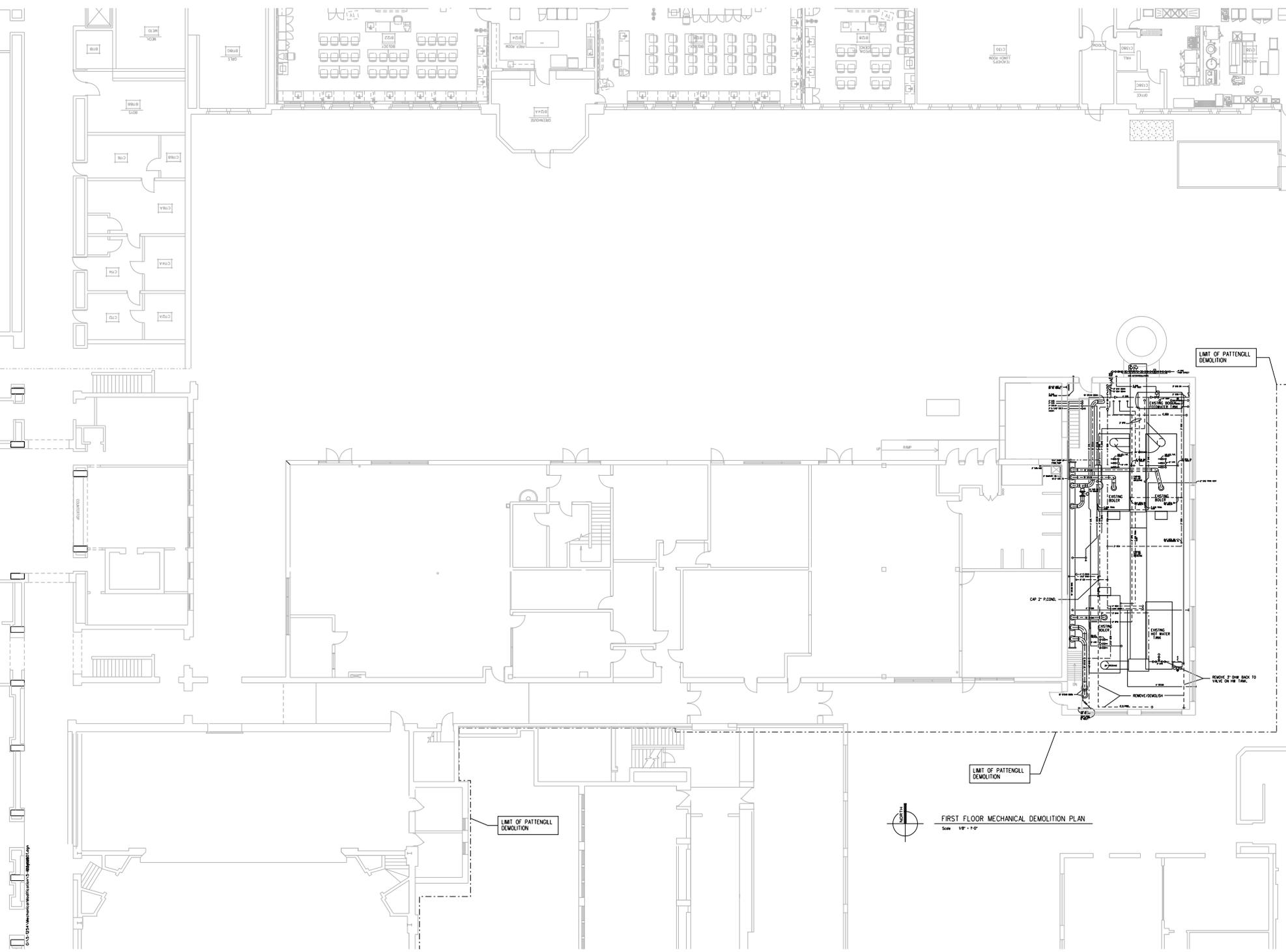
NO.	REVISION	DATE
1	FOR RFP NO. 0000000000000000	7.4.2008
2	FOR RFP NO. 0000000000000000	8.4.2008
3	FOR RFP NO. 0000000000000000	7.4.2008
4	FOR RFP NO. 0000000000000000	7.4.2008
5	FOR RFP NO. 0000000000000000	7.4.2008
6	FOR RFP NO. 0000000000000000	7.4.2008
7	FOR RFP NO. 0000000000000000	7.4.2008
8	FOR RFP NO. 0000000000000000	7.4.2008
9	FOR RFP NO. 0000000000000000	7.4.2008
10	FOR RFP NO. 0000000000000000	7.4.2008



- GENERAL DEMOLITION NOTES (APPLY TO ALL DRAWINGS)**
1. LANSING SCHOOL DISTRICT RESERVES THE RIGHT OF FIRST REFUSAL IN OWNERSHIP OF ANY EQUIPMENT ITEMS AND MATERIALS TO BE REMOVED FROM THE BUILDING AND SITE.
 2. INVESTIGATION OF EXISTING HEATING, PLUMBING AND VENTILATION SYSTEMS WILL BE REQUIRED BY THE CONTRACTOR AS PART OF HIS BID PROPOSAL. THE EXACT SYSTEM OF DEMOLITION CAN BE ACCURATELY DETERMINED. THE CONTRACTOR'S BID SHALL ALSO COVER REMOVAL OF SOME PORTIONS OF HEATING, PLUMBING AND VENTILATION SYSTEMS AS SHOWN ON THE DRAWING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SYSTEMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SYSTEMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SYSTEMS.
 3. DEMOLITION OF AN ITEM SHALL REQUIRE REMOVAL OF ALL RELATED CONTROLS, DEVICES, CONTROL WIRING AND TUBING TO AVOID CONTACT AND/OR DAMAGE TO ADJACENT SYSTEMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SYSTEMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SYSTEMS.
 4. CONTRACTOR SHALL PROTECT ALL PIPES, CONDUITS, LOGS AND OTHER ITEMS WHICH ARE NOT SCHEDULED FOR IMMEDIATE REMOVAL. A PRELIMINARY LIST OF ITEMS TO BE REMOVED SHALL BE PROVIDED BY THE CONTRACTOR.
 5. PATCH AND FINISH ALL WALL, CEILING AND FLOOR SURFACES FROM WHICH MECHANICAL ITEMS HAVE BEEN REMOVED, TO MATCH EXISTING CONSTRUCTION.
 6. ALL MECHANICAL ITEMS SCHEDULED FOR REUSE OR RELOCATION SHALL BE PROTECTED BY THE CONTRACTOR. COORDINATE STORAGE LOCATION AND METHOD OF PROTECTION WITH THE OWNER.
 7. CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY IF ASBESTOS IS ENCOUNTERED. ASBESTOS ABATEMENT WILL BE BY THE OWNER.

04/13/2014 10:00 AM (Mechanical) 000000000000000000

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 PROJECT NO. 0-1254
 TUNNEL MECHANICAL DEMOLITION PLAN
 MO.00



FIRST FLOOR MECHANICAL DEMOLITION PLAN
 Size - 1/8" = 1'-0"

NO.	REVISION	DATE
1	FOR AND AS CONSTRUCTION 10/20/08	10/20/08
2	FOR AND AS CONSTRUCTION 7/11/12, JM	7/11/12
3	FOR AND AS CONSTRUCTION 8/6/2008	8/6/2008

PATTENOLL DEMOLITION - MECHANICAL MODIFICATION
LANSING SCHOOL DISTRICT
 LANSING, MICHIGAN

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 the Mechanical Engineer
 PROJECT NO. 08-1254
 DATE: 10/20/08
 FIRST FLOOR
 MECHANICAL
 DEMOLITION
 PLAN

